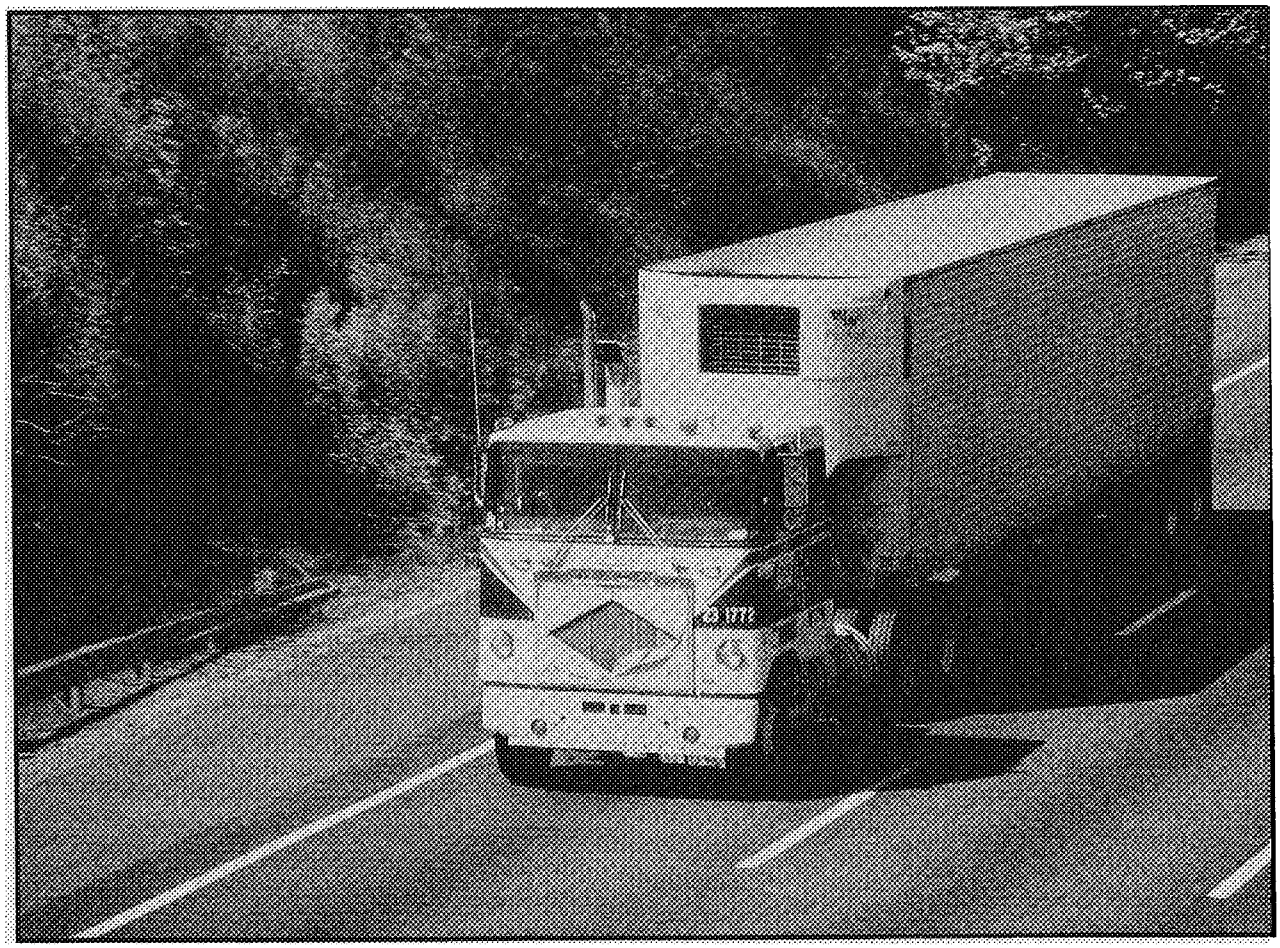
U.S. Department
of Transportation
**Federal Highway
Administration**

Accidents Reported by Motor Carriers of Property 1989

Office of Motor Carriers



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Accidents Reported by Motor Carriers of Property 1989

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Federal Highway Administration
U.S. Department of Transportation
Washington, D.C. 20590

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OMC/FARS
TRUCK ACCIDENT STATISTICS
1980 TO 1989

The table below presents the most complete data available on accidents involving commercial trucks. The data from the Office of Motor Carriers (OMC) are compiled for all accidents (fatal, injury, and property damage only) involving trucks in *interstate* travel, and only those accidents reported to OMC by the carriers and operators of the trucks as outlined in Federal regulation (49 CFR 394). The data from the National Highway Traffic Safety Administration (NHTSA) are from the Fatal Accident Reporting System (FARS), which consists of all fatal crashes occurring nationwide as compiled from police accident reports and reported by States to NHTSA. Truck-involved crash data pertaining to those trucks in both *intrastate* and *interstate* travel are included in this table. The FARS uses the following definition of trucks:

- Medium/Heavy Truck – Any straight truck or combination truck with a gross vehicle weight rating (GVWR) of more than 10,000 pounds.
- Combination Truck – A bobtail tractor or any truck or tractor pulling any number of trailers.

OMC/FARS
Ten-Year Truck Accident Statistics

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
OMC STATISTICS										
FATAL ACCIDENTS	2,058	2,191	1,978	2,031	2,195	2,161	2,101	2,410	2,675	2,642
FATALITIES	2,528	2,810	2,456	2,528	2,721	2,646	2,616	2,907	3,309	3,451
INJURY ACCIDENTS	16,959	17,062	16,354	16,022	17,792	18,135	15,084	16,734	18,504	19,556
INJURIES	27,149	28,533	26,117	26,692	29,149	28,988	25,106	28,018	31,295	34,653
PROPERTY DAMAGE ACCIDENTS	9,203	8,519	8,669	7,979	9,592	8,772	9,044	8,335	11,599	13,143
TOTAL ACCIDENTS	28,220	27,772	27,001	26,032	29,579	29,068	26,229	27,479	32,778	35,341
FARS STATISTICS										
FATAL CRASHES: COMBINATION TRUCKS	3,731	3,863	3,519	3,645	3,907	3,892	3,825	3,746	3,939	3,678
TOTAL FATALITIES: COMBINATION TRUCKS	4,473	4,594	4,226	4,365	4,605	4,655	4,493	4,403	4,609	4,370
FATAL CRASHES: MEDIUM/HEAVY TRUCKS	5,042	4,928	4,396	4,615	4,831	4,841	4,785	4,813	4,885	4,672
TOTAL FATALITIES: MEDIUM/HEAVY TRUCKS	5,971	5,806	5,229	5,491	5,640	5,734	5,579	5,598	5,679	5,488

HIGHLIGHTS OF THE 1989 REPORT

1989 OVERVIEW

- This document profiles 1989 accidents reported by *interstate* commercial carriers of property subject to regulation by the U.S. Department of Transportation. It is suspected that accidents involving interstate carriers were significantly *underreported;* actions are underway to correct this in the future.

- 35,341 accidents were reported by commercial carriers of property in 1989, 8 percent more than in 1988.

- Fewer than 1 in 13 accidents in 1989 resulted in fatalities; however, more than 1 in 2 accidents produced non-fatal injuries.

- Reported accidents involved 3,451 fatalities, 34,653 non-fatal injuries, and over $500 million in property damage.

- Three out of every 10 accidents occurred in just five states: California, Illinois, Ohio, Pennsylvania, and Texas.

- Four out of every 10 reported fatalities occurred in seven states: California, Florida, Illinois, North Carolina, Ohio, Pennsylvania, and Texas.

THE DRIVER

- Only 2 of every 10 persons killed – and 3 of every 10 persons non-fatally injured – in truck accidents were truck drivers or occupants.

- Drivers over 64 tended to be involved in accidents which were decidedly more severe than accidents involving drivers of other age groups.

- When accidents occurred, truck drivers not wearing seat belts were two times more likely to be killed than those wearing belts.

THE VEHICLE

- Seven out of every 10 reported truck accidents involved tractor-semi-trailers.
- Heavier trucks tended to be involved in accidents with fewer injuries than lighter trucks.
- Mechanical defects contributed to very few accidents, according to the carriers reporting the accidents.

THE ACCIDENT SETTING

- Reported accidents were more numerous on divided highways, but more likely to be fatal on undivided highways.
- Seven out of 10 reported accidents occurred under favorable weather and favorable road conditions.

THE ACCIDENT

- Four out of 5 accidents involved collisions between a truck and one or more other vehicles. These accidents generated 91 percent of the fatalities, 83 percent of the injuries, and 73 percent of the property damage reported during 1989.
- Collision accidents were more than twice as likely to result in fatalities than non-collision accidents.
- In 6 out of 7 non-collision accidents, the trucks reportedly overturned, ran off the road, or jackknifed.

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INTRODUCTION

This document presents aggregate statistics derived from the *1989 Motor Carriers of Property Accident Database.* The database was compiled from reports of applicable accidents filed by commercial carriers of property subject to the Department of Transportation Act (49 U.S.C. 1651-60). The database is maintained by the Office of Motor Carriers (OMC), Federal Highway Administration, U.S. Department of Transportation.

The data presented in this publication are intended for use by individuals and organizations in the public and private sectors requiring information on accidents of motor carriers of property. Readers seeking general information will find that these materials satisfy many of their basic data requirements. Persons needing more specialized information than presented here are encouraged to contact OMC directly.

ACCIDENT REPORTING

Motor carriers that operate commercial motor vehicles in interstate commerce are subject to the reporting requirements specified in the *Code of Federal Regulations*, Title 49, Part 394. Additionally, the intrastate transportation performed by those interstate motor carriers is subject to the same reporting requirements. Accidents are reported using Federal Form MCS 50-T, *Motor Carrier Accident Report (Property-Carrying).*

A "reportable" accident has occurred when one or more of the following conditions results:

- At least one person dies.
- At least one person experiences bodily injury which requires immediate medical treatment away from the scene of the accident.
- Property is damaged in the amount of $4,400 or more, based on actual or estimated costs.

The MCS 50-T report contains over 60 data elements pertaining to the motor carrier, driver, vehicles, and circumstances of the accident. Accident reports, when received by OMC, are entered into the Motor Carriers of Property Accident Database.

NATURE OF THE DATA

Readers should be aware of several important limitations in the 1989 data. First, the database used to compile this report is limited to those accident occurrences for which MCS 50-T's were filed. This is significant because there is substantial evidence to suggest that carriers are not reporting all accident occurrences. Secondly, the circumstances of the accidents are entered into the database precisely as that information is reported by the carriers. Consequently, it is possible that commercial carriers' accounts of accidents, as recorded in the database, are biased and deviate from the accounts of the same accidents compiled by police, courts, insurance companies, etc.

Finally, users of this report should remember that this publication is a summary of accident statistics presented without benefit of *exposure* factors. Exposure refers to the potential opportunity for a given event to occur. Suppose, for instance, that two interstate carriers, A and B, experienced 12 and 18 reportable accidents, respectively. Carrier A logged 5 million miles of travel during the year, while Carrier B travelled 10 million miles. Initially, it might look as though Carrier B was less safe than Carrier A, since B had 18 accidents and A had only 12. However, when one considers the exposure—in this case, *total vehicle miles driven*—a very different picture emerges. Now it is seen that Carrier A experienced 2.4 accidents per million miles travelled, whereas Carrier B experienced only 1.8 accidents per million miles of travel. Perhaps Carrier B was really the safer of the two carriers.

Because this document is largely deprived of exposure data, one must exercise great caution in attempting to compare the probabilities of accidents occurring under various circumstances. For instance, while the data on accidents by time of day chronicled in Chapter 4 show that most accidents occurred during the day, one cannot necessarily conclude that the probability of accidents happening in the daytime was greater than at night. Before one could draw that conclusion, one would need to examine such exposure factors as the number of commercial vehicles on the roads in the daytime versus the nighttime.

One may, however, properly use the data in this document to compare the probable consequences of accidents under different circumstances. For example, one *can* make a valid determination about whether accidents were more severe on undivided versus divided highways.

SPECIAL NOTE ON PROPERTY DAMAGE

OMC employs a variety of pre- and post-entry screening activities to help ensure that MCS 50-T reports entered into the Accident Database were complete and accurate. During 1989, post-entry screening included an automated search for those accident records in which Total Property Damage (Item 19A) had been left blank by carriers; a value of "$4,401" was inserted in order to guarantee that all records in the database met Federal reporting criteria for property damage (see *Accident Reporting*, page ix, for a description of these criteria). The "$4,401" value was added to each record

in which Total Property Damage was blank, including those records where Total Persons Killed or Injured (Items 17-19) were not blank.

Consequently, one should view references in this document to property damage with caution—actual property damage values could have been substantially higher or lower than those shown. It should be further noted that there is no mechanism on the MCS 50-T report for gauging whether the Total Property Damage recorded by a carrier represents an "actual" or "estimated" cost.

ORGANIZATION OF THE DOCUMENT

This document contains five chapters:

- Chapter 1: 1989 Overview
- Chapter 2: The Driver
- Chapter 3: The Vehicle
- Chapter 4: The Accident Setting
- Chapter 5: The Accident

Within each chapter, data are organized under specific topics. A glossary of terms, a copy of Form MCS 50-T, and a depiction of common vehicle configurations are presented in the Appendix.

DATA CONVENTIONS

The following conventions are used throughout this document:

- Percentages shown in tables and figures are rounded to the nearest one-tenth of 1 percent. Percentages do not always total 100 due to rounding.
- Items which motor carriers left blank on the 50-T report are noted in tables and figures under the "Not Reported" category.
- When the size of the sample from which the data shown in a given figure were drawn is not readily apparent, the sample size is identified at the base of the figure. For example, "N = 35,341" means that the data shown were drawn from 35,341 accident reports.
- Accident consequences—notably fatality and injury rates—are usually expressed as a rate per 100 accidents.
- Specific parts of the *Federal Motor Carrier Safety Regulations (FMCSRs)* are referenced in the text of the document, as appropriate. For example, "49 CFR 394" means Title 49 of the *Code of Federal Regulations*, Part 394.

ADDITIONAL INFORMATION

- For answers to questions not addressed in this publication, please contact the Federal Highway Administration, Office of Motor Carriers, HIA-10, at 400 Seventh Street, S.W., Washington, D.C. 20590. The telephone number is 202-366-4023.

Chapter 1

1989 OVERVIEW

Accident Class Totals
Accident Consequences
State Accident Statistics
Five-Year Trends

In 1989, 35,341 accidents involving commercial interstate carriers of property were reported by the individuals and companies who operate commercial motor vehicles. These accidents resulted in 3,451 fatalities, 34,653 non-fatal injuries, and property damage estimated at $531,665,000. Fewer than 1 in 13 accidents involved fatalities, though more than 1 in 2 produced non-fatal injuries. Accidents reported in 1989 increased by approximately 21 percent over the 1985 total. During the same period, the number of reported fatalities increased by nearly 30 percent.

ACCIDENT CLASS TOTALS

The 35,341 accidents reported in 1989 fall into three *classes*:

- *Fatal Accidents.* This group includes all accidents for which at least one fatality was reported. These accidents may also have involved non-fatal injuries and property damage.
- *Injury Accidents.* At least one injury, but no fatalities, was reported for each accident in this category. Property damage may also have been a consequence of "injury" accidents.
- *Property Damage Accidents.* Each of these accidents resulted in actual or estimated vehicle, cargo, and other property damage of $4,400 or more, but involved no fatalities or injuries.

Accidents are grouped into these classes according to the highest accident severity. For example, accidents which resulted in both fatalities and injuries are classified as "fatal" accidents. Accidents involving both injuries and property damage fall into the "injury" category.

Table 1-1 summarizes 1989 accident data by the three accident classes.

Table 1-1
1989 Accident Summary

	NUMBER	PERCENT
FATAL ACCIDENTS	2,642	7.5
INJURY ACCIDENTS	19,556	55.3
PROPERTY DAMAGE ACCIDENTS	13,143	37.2
TOTAL ACCIDENTS	35,341	100.0

In Table 1-2, class totals are broken down further by *accident type*, *trip type*, and *carrier type*. Accident type encompasses (1) collisions with moving, fixed, or parked objects; and (2) non-collisions, e.g., fires and jackknifes. Trip type indicates whether the commercial vehicles were engaged in over-the-road or local transportation when the accidents occurred. Carrier type includes for-hire and private.

Approximately 4 out of every 5 accidents reported in 1989 were the result of collisions; 3 out of 4 accidents occurred during over-the-road trips (i.e., on highways between two non–local destination points). In general, as accident severity increased – from property damage to injuries to fatalities – the likelihood that the resultant accidents entailed collisions also increased.

For-hire carriers were involved in 98 percent of all accidents reported in 1989, suggesting that for-hire carriers, as a group, are either (1) much less safe than private carriers, or (2) much more likely to report their accidents than private carriers. Based on its long-term experience monitoring and regulating truck safety, OMC presumes the latter to be the case.

Table 1-3 breaks down accident class totals by type of for-hire carrier.

Table 1-2
Accident Class Totals
By Carrier Type, Accident Type, and Trip Type

	FATAL ACCIDENTS		INJURY ACCIDENTS		PROPERTY DAMAGE ACCIDENTS		TOTAL ACCIDENTS	
	#	%	#	%	#	%	#	%
ACCIDENT TYPE								
COLLISION	2,408	91.1	16,127	82.5	9,543	72.6	28,078	79.4
NON-COLLISION	227	8.6	3,374	17.3	3,550	27.0	7,151	20.2
TYPE NOT RPTD.	7	0.3	55	0.3	49	0.4	111	0.3
TOTAL	2,642	100.0	19,556	100.1	13,143	100.0	35,341	99.9
TRIP TYPE								
OVER-THE-ROAD	2,010	76.1	14,222	72.7	10,321	78.5	26,553	75.1
LOCAL	592	22.4	5,099	26.1	2,684	20.4	8,375	23.7
TYPE NOT RPTD.	40	1.5	235	1.2	138	1.0	413	1.2
TOTAL	2,642	100.0	19,556	100.0	13,143	99.9	35,341	100.0
CARRIER TYPE								
FOR-HIRE	2,547	96.4	19,140	97.9	12,801	97.4	34,488	97.6
PRIVATE	88	3.3	346	1.8	312	2.4	746	2.1
TYPE NOT RPTD.	7	0.3	70	0.4	31	0.2	108	0.3
TOTAL	2,642	100.0	19,556	100.1	13,143	100.0	35,341	100.0

Table 1-3
Breakdown of For-Hire Accidents

	FATAL ACCIDENTS		INJURY ACCIDENTS		PROPERTY DAMAGE ACCIDENTS		TOTAL ACCIDENTS	
	#	%	#	%	#	%	#	%
FOR-HIRE CARRIERS								
ICC AUTHORIZED	1,960	77.0	15,807	82.6	10,515	82.1	28,282	82.0
ICC EXEMPT	566	22.2	3,258	17.0	2,213	17.3	6,037	17.5
OTHER	21	0.8	75	0.4	73	0.6	169	0.5
TOTAL	2,547	100.0	19,140	100.0	12,801	100.0	34,488	100.0

ACCIDENT CONSEQUENCES

Fatalities, injuries, and property damage – the physical *consequences* of commercial vehicle accidents – are summarized in Tables 1-4 and 1-5. Table 1-4 shows that the majority of 1989 accident consequences were the result of (1) collision accidents, (2) accidents occurring during over-the-road transportation, and (3) accidents involving for-hire carriers. As with the class totals, nearly all (more than 93 percent) of the accident consequences reported involved for-hire carriers. Table 1-5 shows that most of these carriers were "ICC authorized."

Table 1-4
Accident Consequences
By Carrier Type, Accident Type, and Trip Type

	FATALITIES		INJURIES		PROPERTY DAMAGE	
	#	%	#	%	$	%
ACCIDENT TYPE						
COLLISION	3,108	90.1	28,916	83.4	379,482,517	71.4
NON-COLLISION	332	9.6	5,646	16.3	151,006,661	28.4
TYPE NOT RPTD.	11	0.3	91	0.3	1,169,698	0.2
TOTAL	3,451	100.0	34,653	100.0	531,665,876	100.0
TRIP TYPE						
OVER-THE-ROAD	2,646	76.7	25,334	73.1	420,536,220	79.1
LOCAL	748	21.7	8,885	25.6	106,029,903	19.9
TYPE NOT RPTD.	57	1.7	434	1.3	5,099,753	1.0
TOTAL	3,451	100.1	34,653	100.0	531,665,876	100.0
CARRIER TYPE						
FOR-HIRE	3,324	96.3	33,829	97.6	498,495,523	93.8
PRIVATE	119	3.4	712	2.1	31,274,619	5.9
TYPE NOT RPTD.	8	0.2	112	0.3	1,902,734	0.4
TOTAL	3,451	99.9	34,653	100.0	531,665,876	100.1

Table 1-5
Breakdown of For-Hire Accident Consequences

	FATALITIES		INJURIES		PROPERTY DAMAGE	
	#	%	#	%	$	%
FOR-HIRE CARRIERS						
ICC AUTHORIZED	2,541	76.4	27,739	82.0	408,702,201	82.0
ICC EXEMPT	759	22.8	5,940	17.6	87,768,094	17.6
OTHER	24	0.7	150	0.4	2,025,228	0.4
TOTAL	3,324	99.9	33,829	100.0	498,495,523	100.0

In 1989, less than 1 out of every 13 (7.5 percent) commercial vehicle accidents produced fatalities. Fatal accidents averaged 1.3 deaths each. Figures 1-1, 1-2, and 1-3 show the rates at which fatalities, injuries, and property damage – by accident and trip type – were generated during 1989. In general, the fatality rate for collision accidents was over two times higher than the rate for non-collision accidents (Figure 1-1). Non-fatal injuries also occurred more frequently in collisions than in non-collisions (Figure 1-2). Trip type – local versus over-the-road – does not appear to have significantly affected fatality and injury rates (Figures 1-1 and 1-2). Property damage in non-collision accidents was produced at a rate nearly 60 percent higher than in collision accidents (Figure 1-3). This may have been the result of relatively high cargo losses sustained during non-collision accidents (e.g., when vehicles jackknifed). Also, property damage resulting from over-the-road accidents was generated at a rate over 25 percent higher than in accidents occurring during local trips.

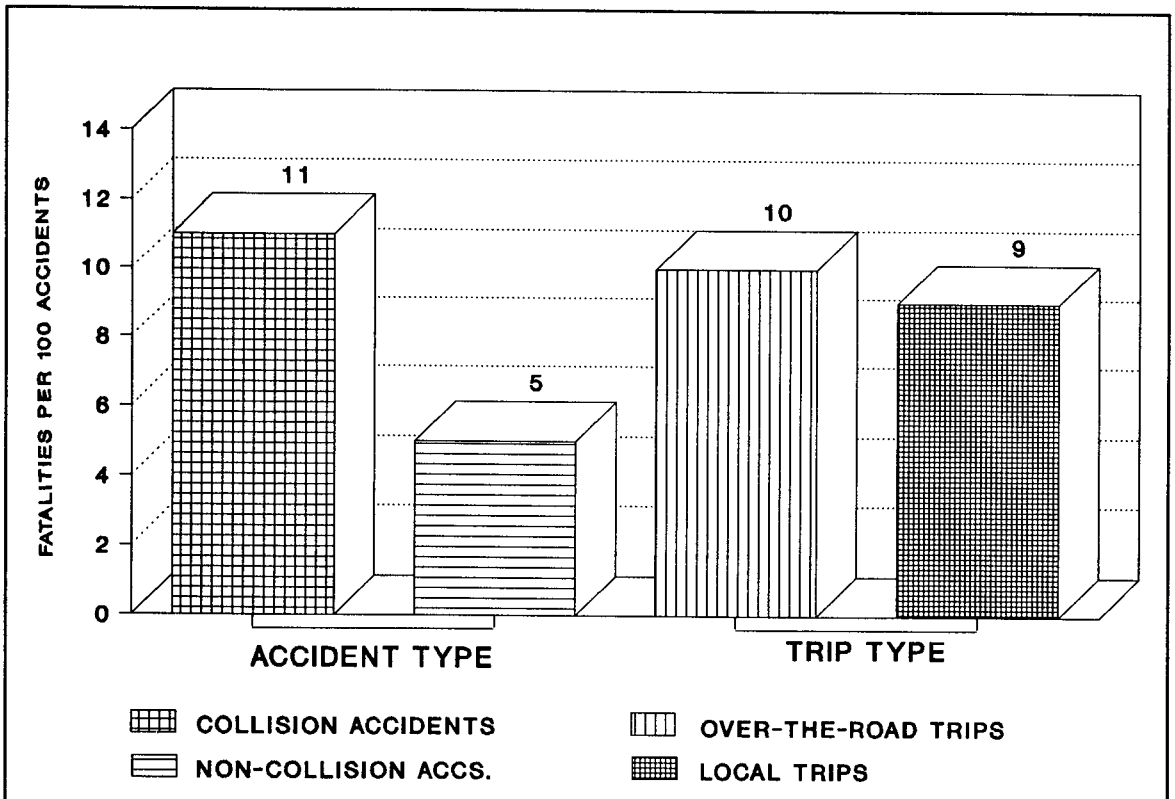

Figure 1-1
Fatalities Per 100 Accidents
By Accident Type and Trip Type

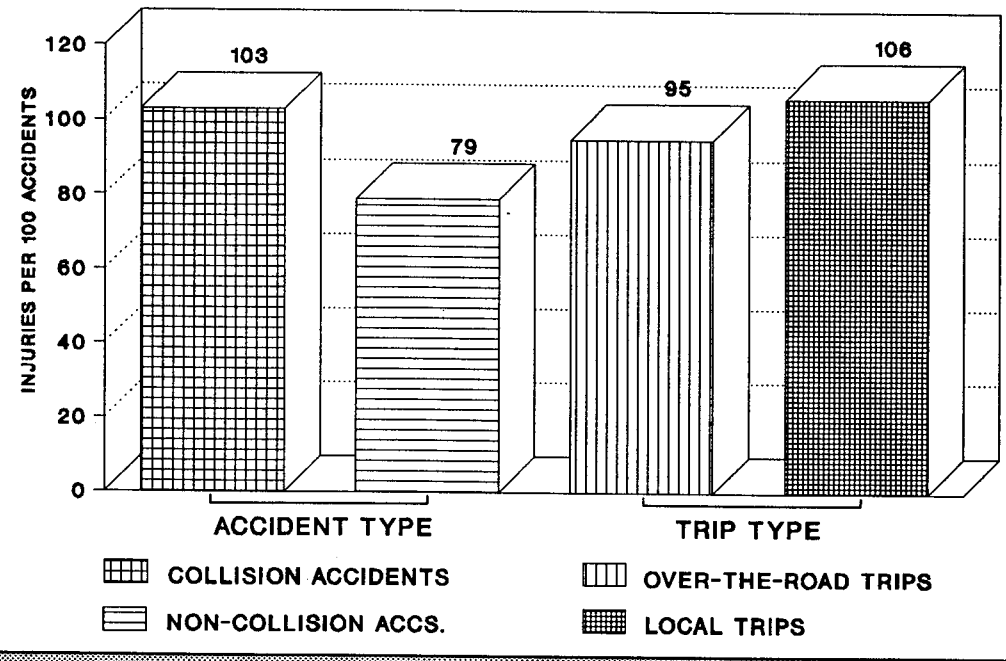

Figure 1-2
Injuries Per 100 Accidents
By Accident Type and Trip Type

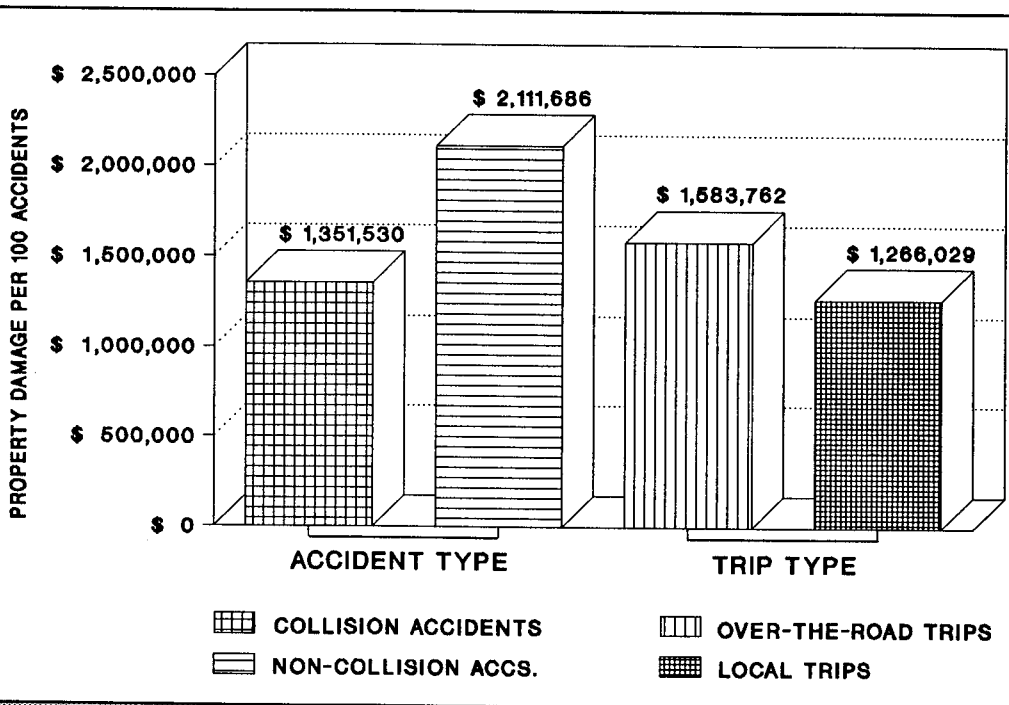

Figure 1-3
Property Damage Per 100 Accidents
By Accident Type and Trip Type

STATE ACCIDENT STATISTICS

During 1989, reported accidents occurred in every state, the District of Columbia, and Puerto Rico and the Virgin Islands. Additional accidents involving U.S. carriers in foreign commerce (in Canada and Mexico) were also reported.

Figure 1-4 compares levels of accidents by state. The largest number of accidents were reported in the travel corridor extending northeast, from Missouri to New York. Large numbers of accidents also occurred in Texas, California, and several southeastern states. In general, accidents in a given state were experienced in proportion to the volume of commercial vehicle traffic in that state. Hence, more accidents occurred in states east of the Mississippi River than in states west of the river.

Tables 1-6 and 1-7 summarize the statistics on accident classes and consequences by state. In 1989, reported accidents ranged from a low of 9 in Hawaii to a high of 2,313 in Pennsylvania (Table 1-6). Reported fatalities stretched from 0 in the District of Columbia to 244 in Texas (Table 1-7).

Twenty-nine percent of all accidents reported during the year occurred in just five states: Pennsylvania, California, Texas, Illinois, and Ohio (Table 1-6). Over 37 percent of the reported fatalities occurred in seven states: Texas, California, Pennsylvania, North Carolina, Florida, Illinois, and Ohio (Table 1-7).

Table 1-8 compares the percentage of accidents, by state, which were fatal.

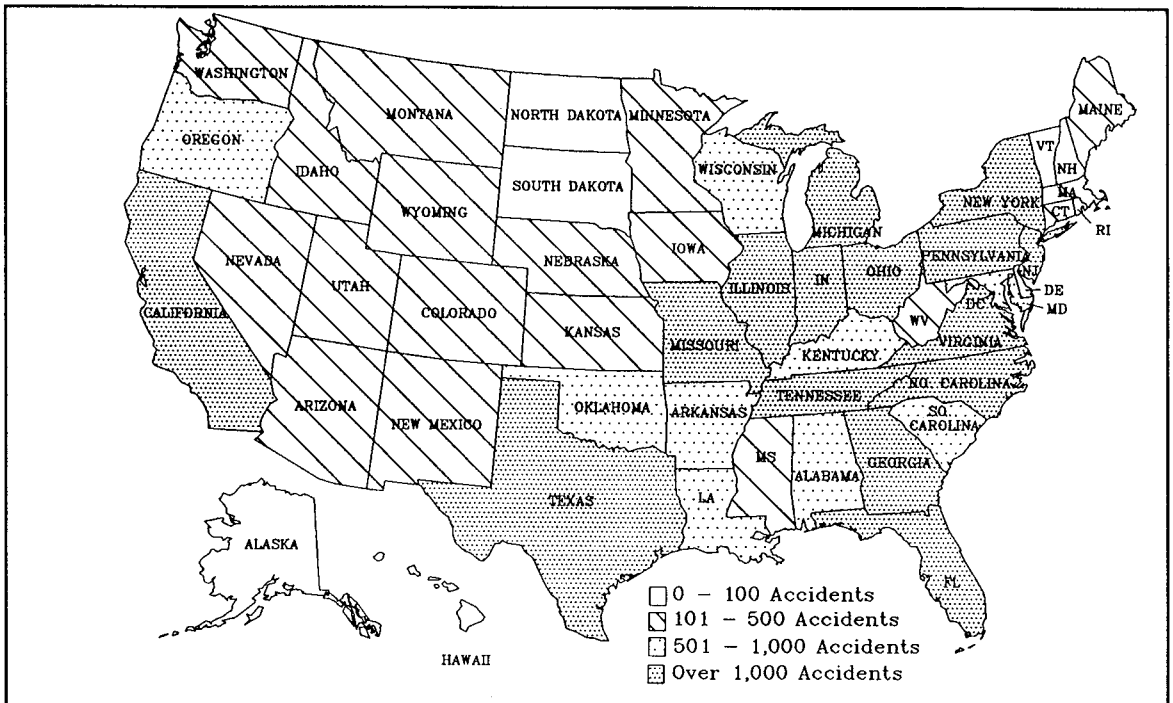

Figure 1-4
Accident Levels
By State

Table 1-6
Accident Class Totals
By State

STATE	FATAL ACCIDENTS #	%	INJURY ACCIDENTS #	%	PROPERTY DAMAGE ACCIDENTS #	%	TOTAL ACCIDENTS #	%
ALABAMA	61	2.3	450	2.3	231	1.8	742	2.1
ALASKA	5	0.2	26	0.1	26	0.2	57	0.2
ARIZONA	37	1.4	232	1.2	141	1.1	410	1.2
ARKANSAS	72	2.7	305	1.6	241	1.8	618	1.7
CALIFORNIA	155	5.9	1,150	5.9	739	5.6	2,044	5.8
COLORADO	43	1.6	204	1.0	153	1.2	400	1.1
CONNECTICUT	20	0.8	216	1.1	182	1.4	418	1.2
DELAWARE	10	0.4	95	0.5	45	0.3	150	0.4
DIST. OF COLUMBIA	0	0.0	40	0.2	27	0.2	67	0.2
FLORIDA	125	4.7	670	3.4	337	2.6	1,132	3.2
GEORGIA	108	4.1	754	3.9	390	3.0	1,252	3.5
HAWAII	1	0.0	5	0.0	3	0.0	9	0.0
IDAHO	11	0.4	62	0.3	77	0.6	150	0.4
ILLINOIS	115	4.4	1,100	5.6	798	6.1	2,013	5.7
INDIANA	94	3.6	826	4.2	594	4.5	1,514	4.3
IOWA	49	1.9	237	1.2	207	1.6	493	1.4
KANSAS	39	1.5	201	1.0	172	1.3	412	1.2
KENTUCKY	51	1.9	392	2.0	282	2.1	725	2.1
LOUISIANA	70	2.6	374	1.9	200	1.5	644	1.8
MAINE	6	0.2	82	0.4	51	0.4	139	0.4
MARYLAND	52	2.0	457	2.3	235	1.8	744	2.1
MASSACHUSETTS	19	0.7	282	1.4	193	1.5	494	1.4
MICHIGAN	83	3.1	583	3.0	339	2.6	1,005	2.8
MINNESOTA	34	1.3	230	1.2	176	1.3	440	1.2
MISSISSIPPI	38	1.4	245	1.3	150	1.1	433	1.2
MISSOURI	79	3.0	602	3.1	376	2.9	1,057	3.0
MONTANA	13	0.5	75	0.4	101	0.8	189	0.5
NEBRASKA	30	1.1	157	0.8	139	1.1	326	0.9
NEVADA	13	0.5	98	0.5	75	0.6	186	0.5
NEW HAMPSHIRE	10	0.4	35	0.2	31	0.2	76	0.2
NEW JERSEY	48	1.8	624	3.2	420	3.2	1,092	3.1
NEW MEXICO	34	1.3	135	0.7	87	0.7	256	0.7
NEW YORK	88	3.3	694	3.5	705	5.4	1,487	4.2
NORTH CAROLINA	118	4.5	793	4.1	455	3.5	1,366	3.9
NORTH DAKOTA	4	0.2	23	0.1	38	0.3	65	0.2
OHIO	118	4.5	1,132	5.8	696	5.3	1,946	5.5
OKLAHOMA	41	1.6	275	1.4	203	1.5	519	1.5
OREGON	48	1.8	247	1.3	239	1.8	534	1.5
PENNSYLVANIA	158	6.0	1,296	6.6	859	6.5	2,313	6.5
RHODE ISLAND	5	0.2	46	0.2	19	0.1	70	0.2
SOUTH CAROLINA	55	2.1	458	2.3	238	1.8	751	2.1
SOUTH DAKOTA	7	0.3	43	0.2	42	0.3	92	0.3
TENNESSEE	72	2.7	616	3.1	383	2.9	1,071	3.0
TEXAS	181	6.9	1,079	5.5	762	5.8	2,022	5.7
UTAH	15	0.6	107	0.5	86	0.7	208	0.6
VERMONT	7	0.3	56	0.3	34	0.3	97	0.3
VIRGINIA	57	2.2	625	3.2	327	2.5	1,009	2.9
WASHINGTON	28	1.1	223	1.1	181	1.4	432	1.2
WEST VIRGINIA	39	1.5	219	1.1	135	1.0	393	1.1
WISCONSIN	53	2.0	432	2.2	276	2.1	761	2.2
WYOMING	14	0.5	126	0.6	147	1.1	287	0.8
U.S. TERRITORIES								
AMER. SAMOA	0	0.0	0	0.0	0	0.0	0	0.0
CANAL ZONE	0	0.0	0	0.0	0	0.0	0	0.0
GUAM	0	0.0	0	0.0	0	0.0	0	0.0
PUERTO RICO	1	0.0	2	0.0	1	0.0	4	0.0
VIRGIN ISLANDS	0	0.0	1	0.0	0	0.0	1	0.0
CANADA	6	0.2	78	0.4	71	0.5	155	0.4
MEXICO	0	0.0	6	0.0	2	0.0	8	0.0
STATE NOT RPTD.	2	0.1	35	0.2	26	0.2	63	0.2
TOTAL	2,642	100.3	19,556	99.6	13,143	100.1	35,341	99.8

Table 1-7
Accident Consequences
By State

STATE	FATALITIES #	FATALITIES %	INJURIES #	INJURIES %	PROPERTY DAMAGE $	PROPERTY DAMAGE %
ALABAMA	77	2.2	779	2.2	10,102,039	1.9
ALASKA	11	0.3	59	0.2	863,233	0.2
ARIZONA	79	2.3	564	1.6	8,785,186	1.7
ARKANSAS	92	2.7	554	1.6	11,052,578	2.1
CALIFORNIA	198	5.7	2,096	6.0	27,129,548	5.1
COLORADO	53	1.5	387	1.1	7,376,981	1.4
CONNECTICUT	25	0.7	356	1.0	4,780,661	0.9
DELAWARE	13	0.4	162	0.5	1,893,046	0.4
DIST. OF COLUMBIA	0	0.0	57	0.2	581,262	0.1
FLORIDA	164	4.8	1,167	3.4	14,236,274	2.7
GEORGIA	133	3.9	1,334	3.8	15,744,493	3.0
HAWAII	1	0.0	7	0.0	70,104	0.0
IDAHO	19	0.6	106	0.3	2,765,652	0.5
ILLINOIS	162	4.7	1,937	5.6	25,648,468	4.8
INDIANA	112	3.2	1,373	4.0	23,572,964	4.4
IOWA	55	1.6	440	1.3	7,974,190	1.5
KANSAS	53	1.5	365	1.1	25,872,997	4.9
KENTUCKY	69	2.0	698	2.0	10,493,640	2.0
LOUISIANA	88	2.5	670	1.9	12,697,856	2.4
MAINE	7	0.2	131	0.4	2,233,985	0.4
MARYLAND	71	2.1	757	2.2	9,073,575	1.7
MASSACHUSETTS	23	0.7	461	1.3	5,539,494	1.0
MICHIGAN	112	3.2	971	2.8	12,951,048	2.4
MINNESOTA	46	1.3	370	1.1	6,157,739	1.2
MISSISSIPPI	48	1.4	456	1.3	6,288,358	1.2
MISSOURI	101	2.9	1,154	3.3	16,397,692	3.1
MONTANA	22	0.6	147	0.4	4,662,084	0.9
NEBRASKA	36	1.0	324	0.9	6,896,178	1.3
NEVADA	19	0.6	163	0.5	2,824,637	0.5
NEW HAMPSHIRE	13	0.4	57	0.2	1,009,645	0.2
NEW JERSEY	62	1.8	1,085	3.1	11,462,777	2.2
NEW MEXICO	41	1.2	276	0.8	4,082,178	0.8
NEW YORK	106	3.1	1,125	3.2	17,518,086	3.3
NORTH CAROLINA	167	4.8	1,450	4.2	20,855,639	3.9
NORTH DAKOTA	6	0.2	50	0.1	822,802	0.2
OHIO	160	4.6	1,859	5.4	25,616,037	4.8
OKLAHOMA	48	1.4	494	1.4	9,655,351	1.8
OREGON	68	2.0	431	1.2	13,215,054	2.5
PENNSYLVANIA	196	5.7	2,359	6.8	33,388,283	6.3
RHODE ISLAND	5	0.1	75	0.2	693,296	0.1
SOUTH CAROLINA	74	2.1	834	2.4	10,125,586	1.9
SOUTH DAKOTA	7	0.2	78	0.2	2,029,925	0.4
TENNESSEE	89	2.6	1,073	3.1	15,325,904	2.9
TEXAS	244	7.1	1,952	5.6	27,647,988	5.2
UTAH	20	0.6	176	0.5	5,045,902	0.9
VERMONT	8	0.2	91	0.3	1,230,236	0.2
VIRGINIA	67	1.9	1,111	3.2	15,499,645	2.9
WASHINGTON	30	0.9	384	1.1	5,652,780	1.1
WEST VIRGINIA	50	1.4	399	1.2	6,606,760	1.2
WISCONSIN	65	1.9	764	2.2	10,458,946	2.0
WYOMING	18	0.5	277	0.8	5,485,626	1.0
U.S. TERRITORIES						
AMERICAN SAMOA	0	0.0	0	0.0	0	0.0
CANAL ZONE	0	0.0	0	0.0	0	0.0
GUAM	0	0.0	0	0.0	0	0.0
PUERTO RICO	1	0.0	2	0.0	36,802	0.0
VIRGIN ISLANDS	0	0.0	1	0.0	4,401	0.0
CANADA	15	0.4	132	0.4	2,603,701	0.5
MEXICO	0	0.0	13	0.0	113,561	0.0
STATE NOT RPTD.	2	0.1	60	0.2	813,003	0.2
TOTAL	3,451	99.8	34,653	99.8	531,665,876	100.2

Table 1-8
Percent Fatal Accidents By State

STATE	FATAL ACCIDENTS	TOTAL ACCIDENTS	% FATAL ACCIDENTS
ALABAMA	61	742	8.2
ALASKA	5	57	8.8
ARIZONA	37	410	9.0
ARKANSAS	72	618	11.6
CALIFORNIA	155	2,044	7.6
COLORADO	43	400	10.8
CONNECTICUT	20	418	4.8
DELAWARE	10	150	6.7
DIST. OF COLUMBIA	0	67	0.0
FLORIDA	125	1,132	11.0
GEORGIA	108	1,252	8.6
HAWAII	1	9	11.1
IDAHO	11	150	7.3
ILLINOIS	115	2,013	5.7
INDIANA	94	1,514	6.2
IOWA	49	493	9.9
KANSAS	39	412	9.5
KENTUCKY	51	725	7.0
LOUISIANA	70	644	10.9
MAINE	6	139	4.3
MARYLAND	52	744	7.0
MASSACHUSETTS	19	494	3.8
MICHIGAN	83	1,005	8.3
MINNESOTA	34	440	7.7
MISSISSIPPI	38	433	8.8
MISSOURI	79	1,057	7.5
MONTANA	13	189	6.9
NEBRASKA	30	326	9.2
NEVADA	13	186	7.0
NEW HAMPSHIRE	10	76	13.2
NEW JERSEY	48	1,092	4.4
NEW MEXICO	34	256	13.3
NEW YORK	88	1,487	5.9
NORTH CAROLINA	118	1,366	8.6
NORTH DAKOTA	4	65	6.2
OHIO	118	1,946	6.1
OKLAHOMA	41	519	7.9
OREGON	48	534	9.0
PENNSYLVANIA	158	2,313	6.8
RHODE ISLAND	5	70	7.1
SOUTH CAROLINA	55	751	7.3
SOUTH DAKOTA	7	92	7.6
TENNESSEE	72	1,071	6.7
TEXAS	181	2,022	9.0
UTAH	15	208	7.2
VERMONT	7	97	7.2
VIRGINIA	57	1,009	5.6
WASHINGTON	28	432	6.5
WEST VIRGINIA	39	393	9.9
WISCONSIN	53	761	7.0
WYOMING	14	287	4.9
U.S. TERRITORIES			
AMERICAN SAMOA	0	0	0.0
CANAL ZONE	0	0	0.0
GUAM	0	0	0.0
PUERTO RICO	1	4	25.0
VIRGIN ISLANDS	0	1	0.0
CANADA	6	155	3.9
MEXICO	0	8	0.0
STATE NOT RPTD.	2	63	3.2
TOTAL	2,642	35,341	7.5

FIVE-YEAR TRENDS

Figures 1-5 through 1-8 summarize accident trends for the five-year period, 1985–1989. In reviewing these data, note that the property damage thresholds (i.e., the lower-end dollar boundaries at which accidents are reportable according to the Federal property damage criterion) have been adjusted for inflation in terms of 1975 dollars. Hence, those accidents which were reported, but which did not meet the adjusted thresholds, have been excluded from the figures and tables.

Key trends during the five-year period included the following:

- Accidents reported in 1989 increased 22 percent over total accidents reported in 1985 (Figure 1-5).
- Fatal accidents also increased 22 percent over the 1985 total, to reach 2,642 in 1989 (Figure 1-6). Total fatalities increased by more than 30 percent to 3,451 in 1989 (Figure 1-7).
- Total injuries, exclusive of fatalities, increased nearly 20 percent over the 1985 value, to 34,653 in 1989 (Figure 1-8).

Table 1-9 summarizes the statistical data for the five-year period. Percentage changes from year to year are shown for each statistic. In general, accidents, fatalities, injuries, and property damage, after declining in 1986, tended to increase significantly in 1987, 1988, and 1989.

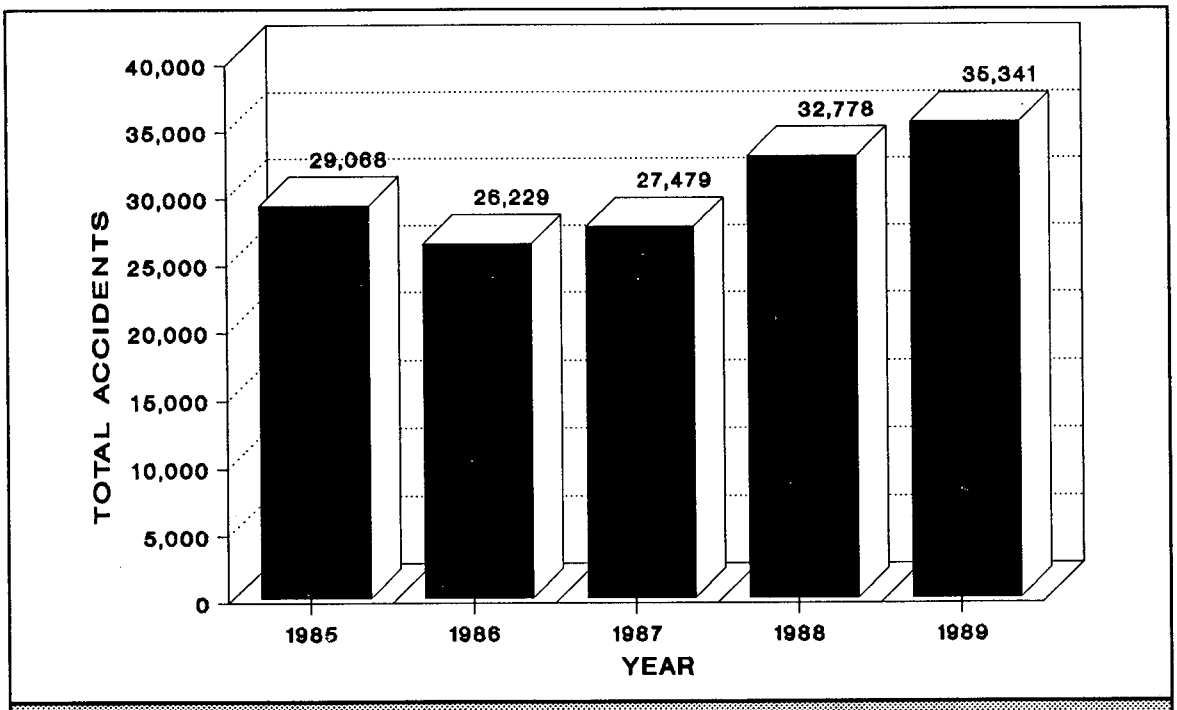

Figure 1-5
Total Accidents
By Year

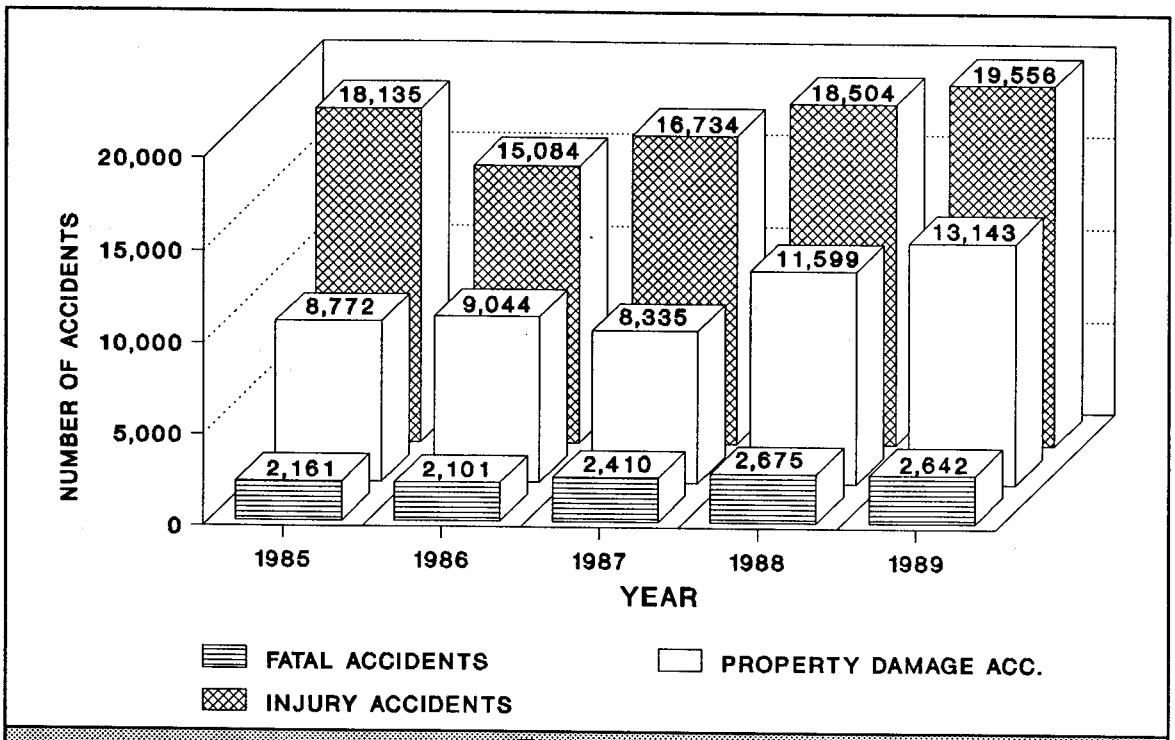

Figure 1-6
Accident Class Totals
By Year

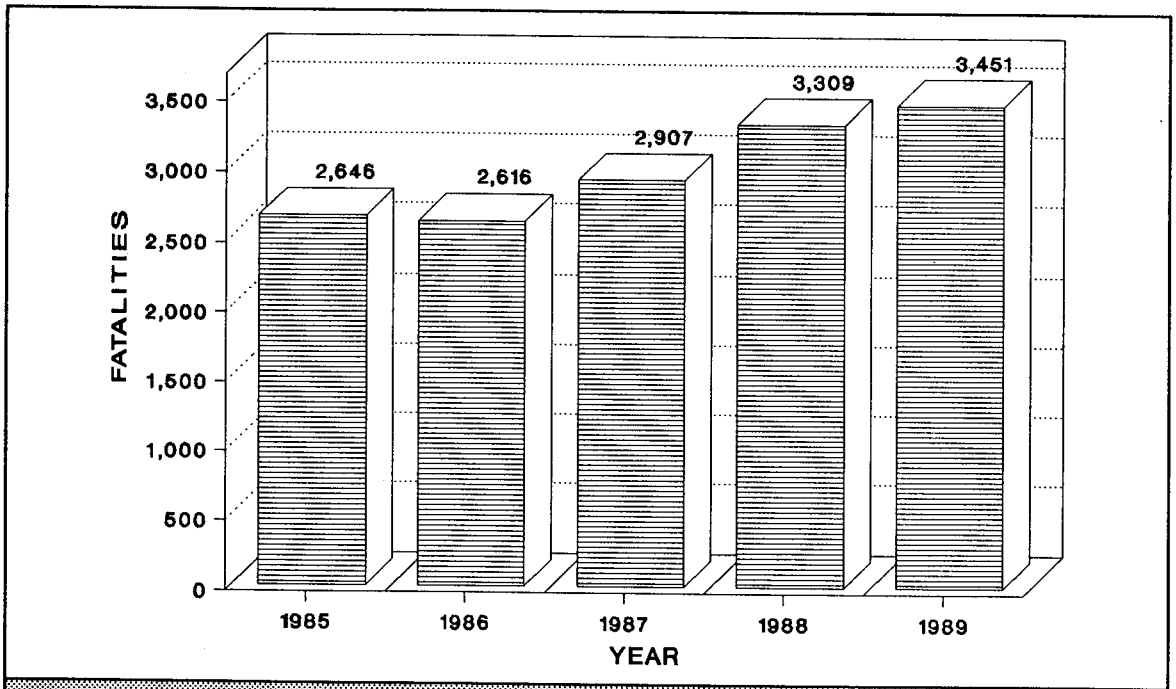

Figure 1-7
Fatalities By Year

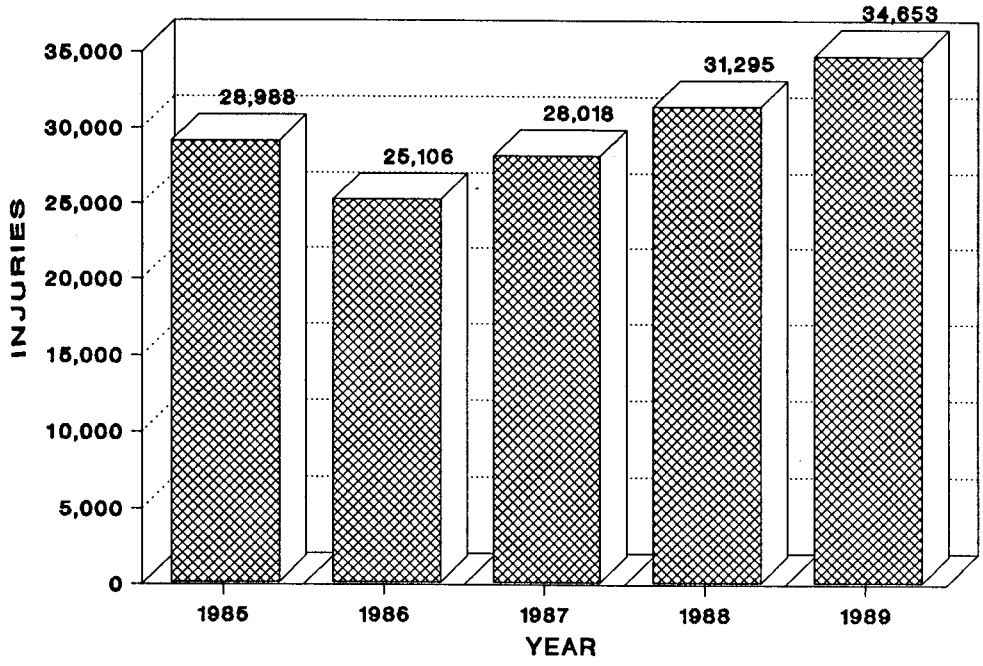

Figure 1-8
Injuries By Year

Table 1-9
Annual Percentage Change in Accident Statistics

	1985-1986	1986-1987	1987-1988	1988-1989	1985-1989
ACCIDENTS					
FATAL	-2.8	+14.7	+11.0	-1.2	+22.2
INJURY	-16.8	+10.9	+10.6	+5.7	+7.8
PROPERTY DAMAGE	+3.1	-7.8	+39.2	+13.3	+49.8
TOTAL	-9.8	+4.8	+19.3	+7.8	+21.6
CONSEQUENCES					
FATALITIES	-1.1	+11.1	+13.8	+4.3	+30.4
INJURIES	-13.4	+11.6	+11.7	+10.7	+19.5

Chapter 2 THE DRIVER

Physical Condition of Drivers
Accidents and Driver Age
Accidents and Hours Driven
Use of Seat Belts

At the time of the accident, the typical professional driver was male, between the ages of 25 and 45, and reported to be in good physical condition. Driver age appeared to impact accident severity most significantly when drivers were over 64 years of age; drivers between the ages of 21 and 44 tended to be involved in accidents which produced fewer fatalities and injuries than other drivers. The majority of accidents occurred within the first four hours of vehicle operation. When accidents occurred, truck drivers who had not worn seat belts were twice as likely to be killed than drivers who used their belts.

PHYSICAL CONDITION OF DRIVERS

In 9 out of 10 accidents, physical impairment of the commercial vehicle driver was not a causal factor, according to carriers' accounts of the accidents reported in 1989. As shown in Table 2-1, driver's condition just prior to the accident was reported as "apparently normal" in 96 percent of the accidents; 2 percent of the drivers were acknowledged to have "dozed at the wheel"; and less than 1 percent of the drivers were reported to have "been drinking." A very small number of drivers (12) involved in accidents were said to have been granted "waiver of certain physical defects" (49 CFR 391.49).

Table 2-1
Accidents, Fatalities, Injuries, and Property Damage
By Reported Condition of Driver at Time of Accident

	ACCIDENTS		FATALITIES		INJURIES		PROPERTY DAMAGE	
	#	%	#	%	#	%	$	%
CONDITION OF DRIVER								
APPARENTLY NORMAL	33,981	96.2	3,264	94.6	33,284	96.0	499,916,326	94.0
SICK	78	0.2	10	0.3	73	0.2	1,595,692	0.3
HAD BEEN DRINKING	184	0.5	17	0.5	227	0.7	4,081,857	0.8
DOZED AT WHEEL	617	1.7	55	1.6	644	1.9	17,092,423	3.2
MEDICAL WAIVER	12	0.0	2	0.1	17	0.0	167,245	0.0
OTHER	254	0.7	68	2.0	202	0.6	5,354,455	1.0
CONDITION NOT RPTD.	215	0.6	35	1.0	206	0.6	3,457,878	0.7
TOTAL	35,341	99.9	3,451	100.1	34,653	100.0	531,665,876	100.0

In reviewing the data on driver condition, it should be noted that carrier officials actually reporting the accidents to DOT were not usually present at the accident sites to observe the conditions of their drivers firsthand. Also, police reports which could help substantiate carriers' accounts of their drivers' conditions were not routinely available to DOT analysts in 1989.

Table 2-2 reveals that persons killed or injured in commercial vehicle accidents were more likely to be non-occupants of trucks (e.g., drivers and passengers in other vehicles, bicyclists, or pedestrians) than truck occupants. In 1989, 8 out of every 10 persons killed in commercial vehicle accidents were non-occupants of the trucks; nearly 7 out of every 10 persons injured were also non-occupants.

ACCIDENTS AND DRIVER AGE

Figure 2-1 breaks down total accidents by driver age. Not suprisingly, the bulk of the accidents (82 percent) involved drivers between the ages of 25 and 54, which is consistent with the age spread of most of the nation's professional drivers. Approximately 1 percent of the accidents involved drivers under 21 and over 64.

Figure 2-2 compares accident severity by driver age. In general, when driver age was between 21 and 44, age did not appear to significantly impact the severity of accidents (fatalities and injuries per

Table 2-2
Fatalities and Injuries Among
Truck Occupants and Truck Non-Occupants

	FATALITIES		INJURIES	
	#	%	#	%
DRIVER	401	11.6	7,880	22.7
RELIEF DRIVER	42	1.2	618	1.8
OTHER AUTHORIZED TRUCK OCCUPANT	136	4.0	1,864	5.4
UNAUTHORIZED TRUCK OCCUPANT	46	1.3	305	0.9
PERSON NOT IN TRUCK	2,826	81.9	23,986	69.2
TOTAL	3,451	100.1	34,653	100.0

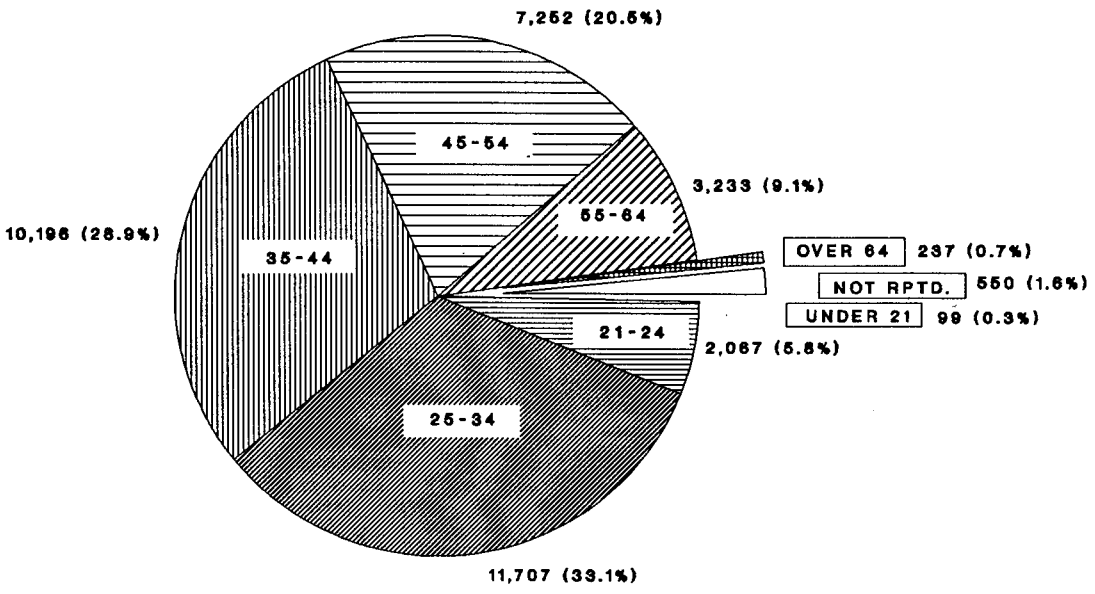

Figure 2-1
Accidents By Driver Age
(N = 35,341)

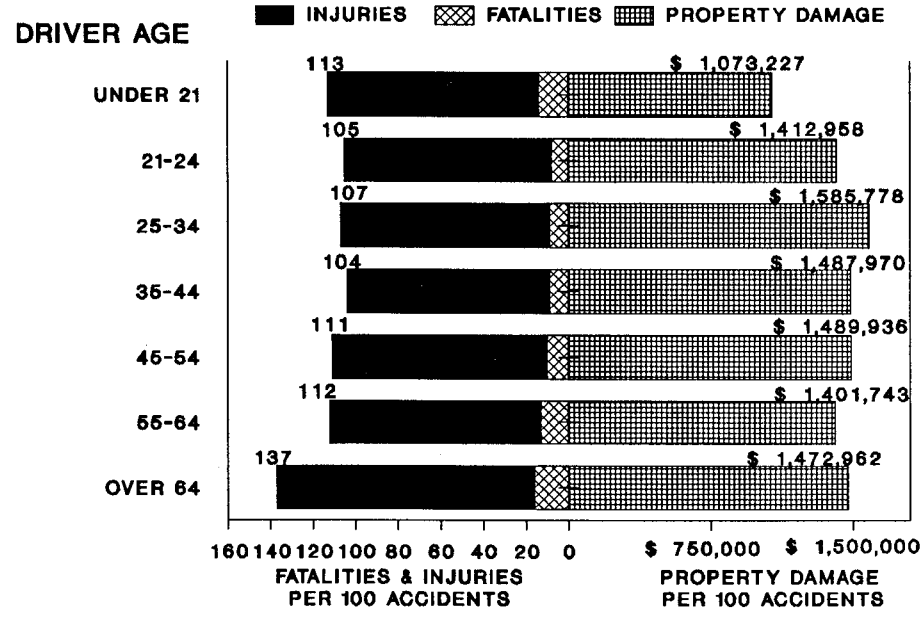

Figure 2-2
Accident Consequences
By Driver Age

100 accidents ranged from 104 to 107). In contrast, accidents involving drivers under 21 and over 44 were, at least on the surface, more severe (fatalities/injuries per 100 accidents ranged from 111 to 137). However, it should be noted that this apparent difference in accident severity by driver age was not tested for statistical significance. Also, drivers under 21 were generally prohibited from operating commercial vehicles subject to Federal regulation (see 49 CFR 391.2 and 391.67 for exceptions).

The 1989 data, viewed in isolation, do not reveal whether drivers in some age groups are more accident-prone than drivers in other groups. To make such a determination, data on accident occurrences by age group would need to be examined in relation to the total number of drivers within each age category.

ACCIDENTS AND HOURS DRIVEN

As driving time increased, total accidents reported declined (Figure 2-3). Hence, 31 percent of all accidents occurred within 1–2 hours after the last eight-hour period off-duty, 25 percent within 3–4 hours, 19 percent within 5–6 hours, etc.

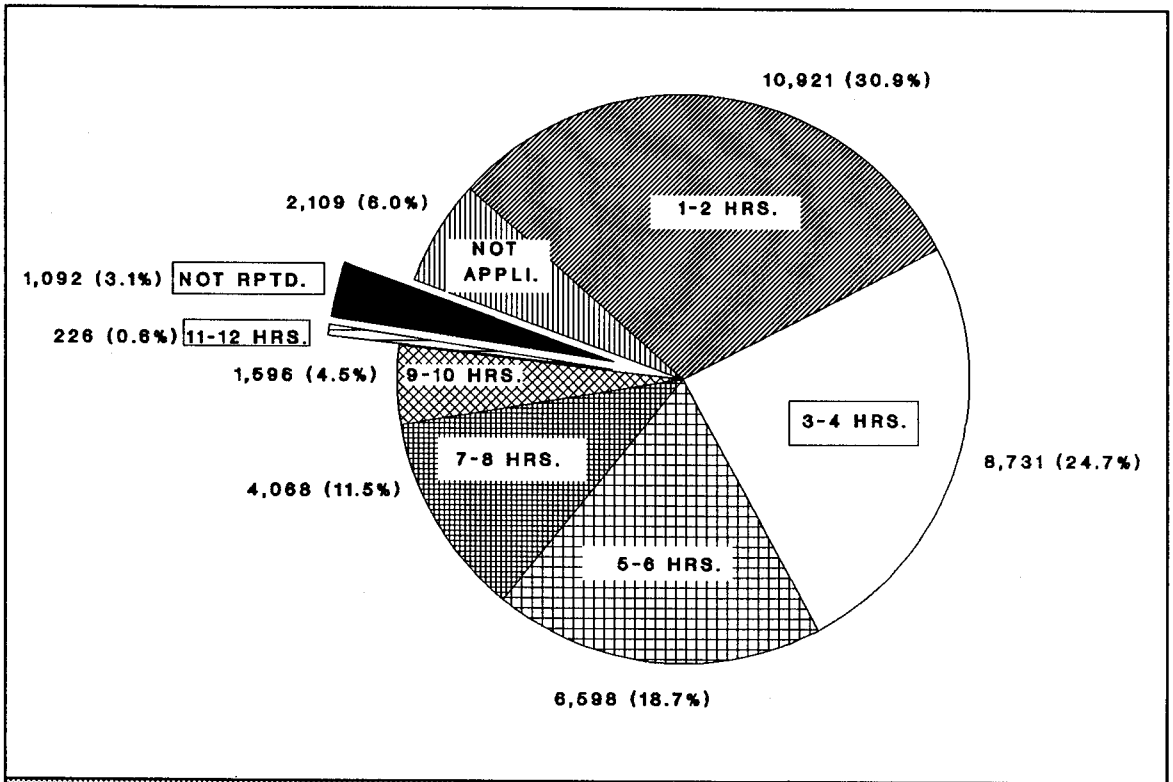

Figure 2-3
Accidents By Hours Driven Since Last Off Duty
(N = 35,341)

Accidents were included in the "Not Applicable" category (Figure 2-3) if the last eight hours off-duty were accumulated in two separate rest periods (49 CFR 394.20(a), Item 11E).

Figure 2-4 compares the effect of hours driven on accident severity. In general, hours driven after the last rest period did not have a dramatic impact on fatalities and injuries, although there was an increase in the fatality rate once driving time exceeded 9 hours. The impact of hours driven on property damage, however, was more pronounced—property damage per 100 accidents was 22 percent higher when drivers had been operating for 9–10 hours instead of 1–2 hours. This increase may be partially explained by the fact that the incidence of non-collision accidents increased from 19 percent after 1–2 hours of driving to 24 percent after 11–12 hours (Table 2-3). Non-collision accidents tended to result in higher levels of property damage than collision accidents (see Chapter 1).

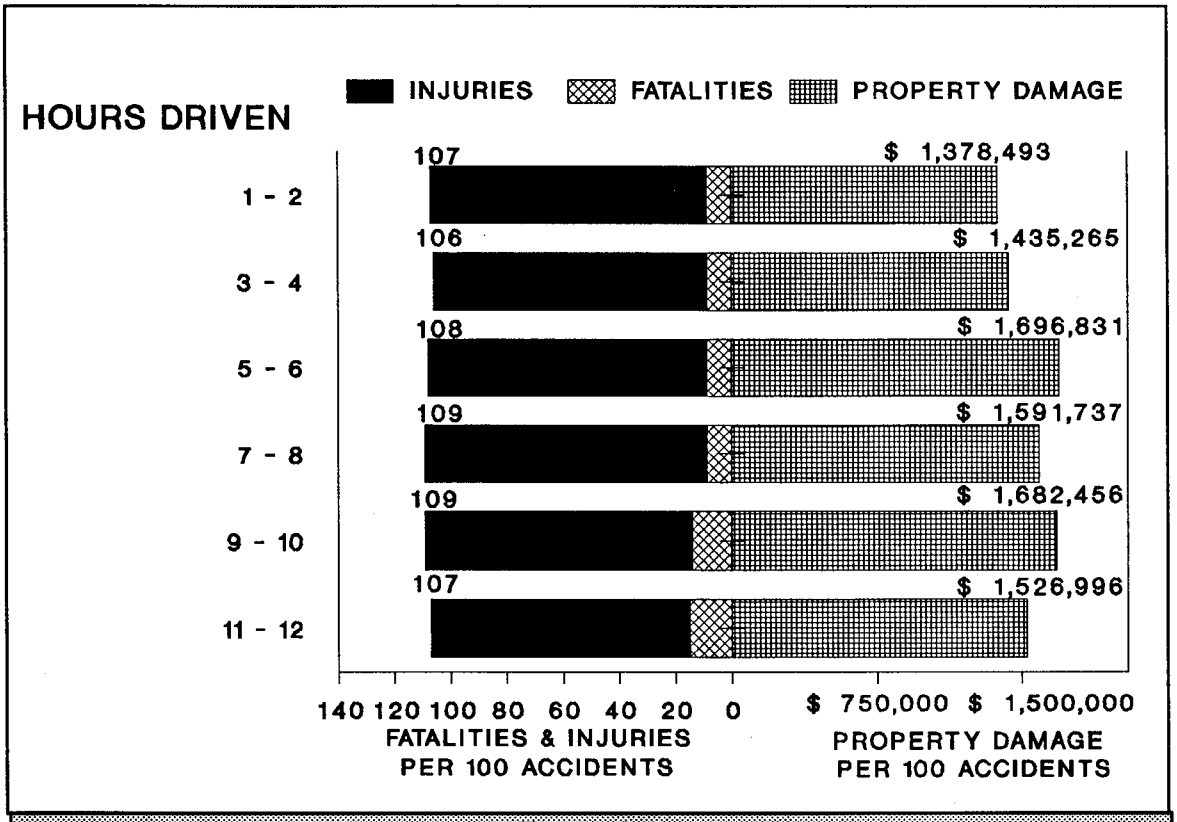

Figure 2-4
Accident Consequences
By Hours Driven

Table 2-3
Accident Type
By Hours Driven

HOURS DRIVEN	COLLISION ACCIDENTS #	%	NON-COLLISION ACCIDENTS #	%	NOT REPORTED #	%	TOTAL ACCIDENTS #	%
1-2 HOURS	8,821	80.8	2,072	19.0	28	0.3	10,921	100.1
3-4 HOURS	6,896	79.0	1,807	20.7	28	0.3	8,731	100.0
5-6 HOURS	5,199	78.8	1,378	20.9	21	0.3	6,598	100.0
7-8 HOURS	3,285	80.8	774	19.0	9	0.2	4,068	100.0
9-10 HOURS	1,274	79.8	320	20.1	2	0.1	1,596	100.0
11-12 HOURS	171	75.7	54	23.9	1	0.4	226	100.0
NOT APPLICABLE	1,647	78.1	452	21.4	10	0.5	2,109	100.0
HOURS NOT RPTD.	785	71.9	294	26.9	13	1.2	1,092	100.0
TOTAL	28,078	79.4	7,151	20.2	112	0.3	35,341	99.9

USE OF SEAT BELTS

While 96 percent of the commercial vehicles involved in reported accidents in 1989 were equipped with seat belts – and while use of seat belts by commercial drivers was mandated by Federal regulation (49 CFR 392.16) – belts were not worn in at least 12 percent of the accidents, according to the carrier officials who reported the accidents (Figure 2-5). The impact of not wearing seat belts was straightforward – truck drivers who did not use the belts were twice as likely to be killed. However, drivers not using seat belts were only 10 percent more likely to be injured than drivers who used their belts (Figure 2-6).

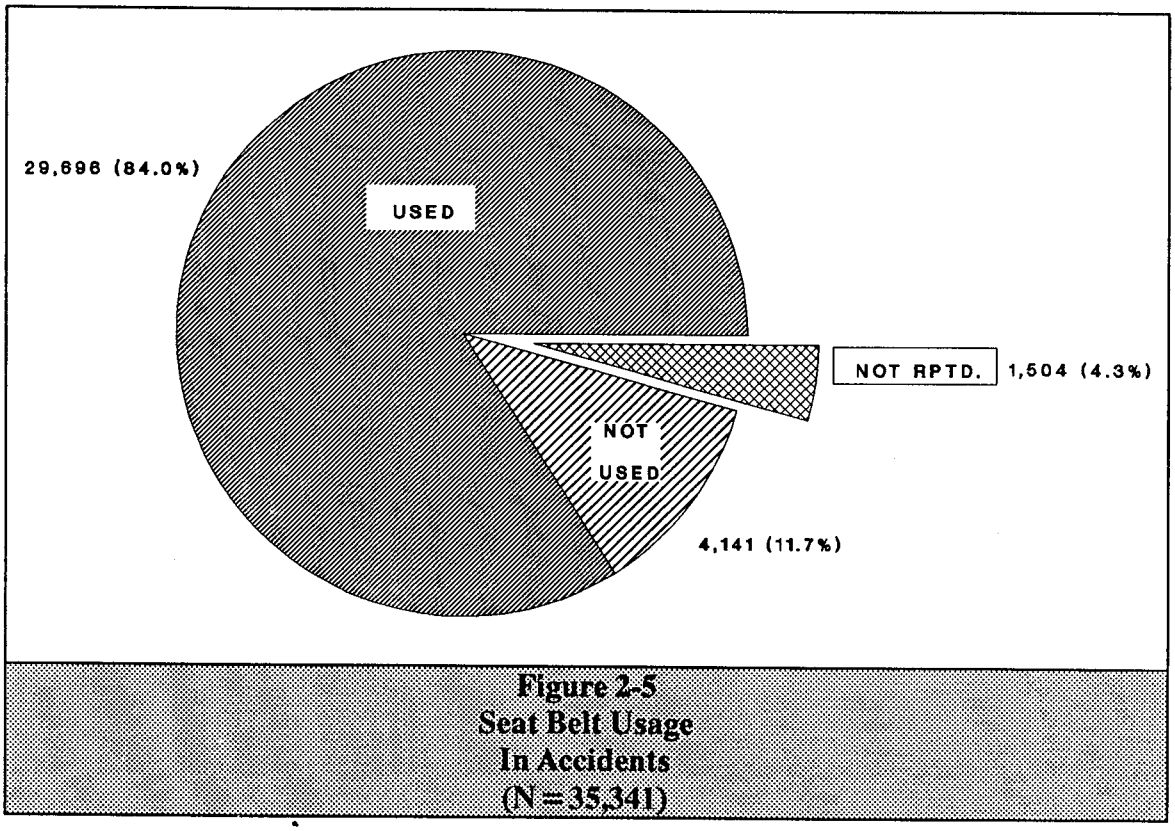

Figure 2-5
Seat Belt Usage
In Accidents
(N = 35,341)

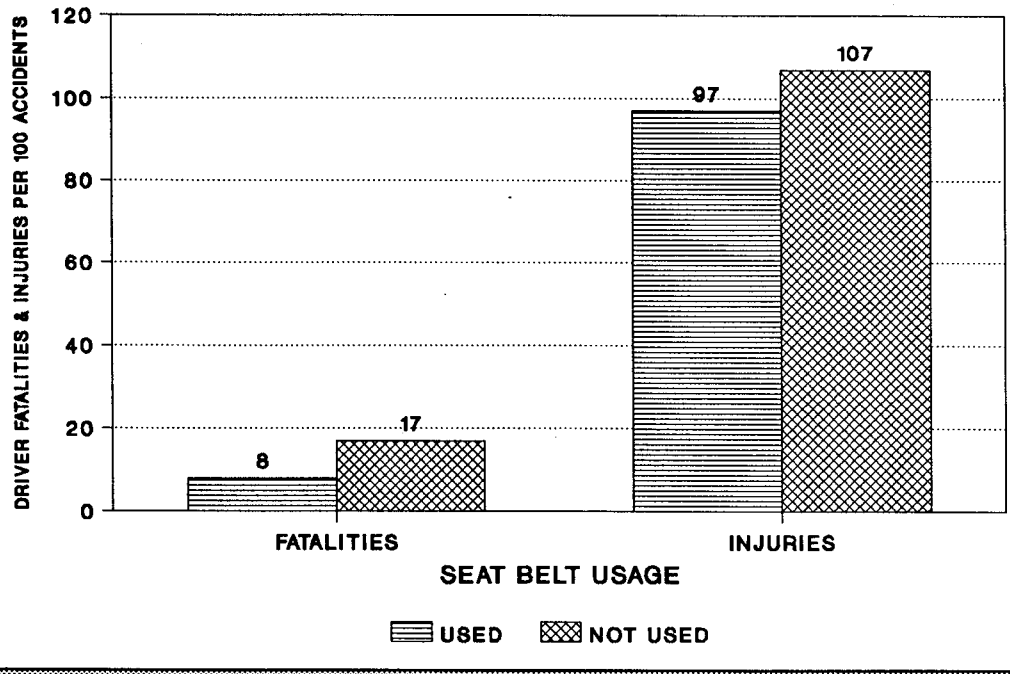

Figure 2-6
Driver Fatalities and Injuries
By Seat Belt Usage

Chapter 3 THE VEHICLE

Vehicle Type and Length
Gross Vehicle Weight
Cargo Types
Hazardous Materials
Mechanical Defects

The typical commercial vehicle involved in reportable accidents was a tractor-semitrailer. The vehicle was between 55 and 65 feet long, had a gross vehicle weight between 45,000 and 80,000 pounds, and was hauling "general freight" at the time of the accident. The average accident involving the typical vehicle resulted in excess of one death or injury. Vehicle defects were rarely cited as the cause of the accident. When defects were acknowledged, however, brake and wheel/tire failures were most often said to have been the problem.

VEHICLE TYPE AND LENGTH

Seventy-three percent of all accidents reported in 1989 involved the tractor-semitrailer configuration (Table 3-1). These accidents accounted for 74 percent of all fatalities, 72 percent of the injuries, and 77 percent of the property damage reported during the year. In contrast, single-unit trucks accounted for 12 percent of all accidents. The tractor-semi-trailer-full trailer configuration was involved in nearly 4 percent of the accidents. (A visual depiction of common commercial vehicle configurations is shown in the Appendix.)

Table 3-2 summarizes the variance in total accidents and accident consequences by vehicle length. Over half of the accidents (52 percent) involved vehicles between 55 and 64 feet in length, and approximately 1 out of 4 (25 percent) of the accidents involved vehicles under 55 feet. Vehicle configurations in excess of 64 feet accounted for only 1 in 5 accidents (20 percent).

Figure 3-1 examines the relationship between the length of commercial vehicles involved in accidents and accident severity. Interestingly, shorter vehicles tended to be involved in accidents which produced the highest frequency of fatalities and injuries.

Table 3-1
Accidents, Fatalities, Injuries, and Property Damage
By Vehicle Configuration

	ACCIDENTS		FATALITIES		INJURIES		PROPERTY DAMAGE	
	#	%	#	%	#	%	$	%
VEHICLE CONFIGURATION								
TRUCK	4,265	12.1	342	9.9	4,591	13.2	44,966,981	8.5
TRUCK-FULL TRAILER	444	1.3	39	1.1	381	1.1	6,424,834	1.2
TRUCK-OTHER	45	0.1	7	0.2	34	0.1	452,111	0.1
TRACTOR	1,779	5.0	152	4.4	1,929	5.6	18,761,480	3.5
TRACTOR-SEMI-TRAILER	25,821	73.1	2,568	74.4	24,837	71.7	410,979,067	77.3
TRACTOR-SEMI-FULL	1,302	3.7	148	4.3	1,255	3.6	26,490,727	5.0
TRACTOR-SEMI-FL-FL*	41	0.1	5	0.1	39	0.1	760,776	0.1
TRACTOR-OTHER	544	1.5	42	1.2	549	1.6	7,581,453	1.4
OTHER	343	1.0	30	0.9	332	1.0	4,022,043	0.8
CONFIG. NOT RPTD.	757	2.1	118	3.4	706	2.0	11,226,404	2.1
TOTAL	35,341	100.0	3,451	99.9	34,653	100.0	531,665,876	100.0

*FL = FULL

Table 3-2
Accident Class Totals
By Vehicle Length

	FATAL ACCIDENTS		INJURY ACCIDENTS		PROPERTY DAMAGE ACCIDENTS		TOTAL ACCIDENTS	
	#	%	#	%	#	%	#	%
VEHICLE LENGTH								
UNDER 20 FEET	110	4.2	1,280	6.5	553	4.2	1,943	5.5
20 - 34 FEET	212	8.0	1,861	9.5	982	7.5	3,055	8.6
35 - 49 FEET	138	5.2	1,212	6.2	748	5.7	2,098	5.9
50 - 54 FEET	167	6.3	992	5.1	606	4.6	1,765	5.0
55 - 59 FEET	671	25.4	4,924	25.2	3,060	23.3	8,655	24.5
60 - 64 FEET	747	28.3	5,198	26.6	3,900	29.7	9,845	27.9
65 - 69 FEET	389	14.7	2,861	14.6	2,374	18.1	5,624	15.9
OVER 69 FEET	111	4.2	709	3.6	570	4.3	1,390	3.9
LENGTH NOT RPTD.	97	3.7	519	2.7	350	2.7	966	2.7
TOTAL	2,642	100.0	19,556	100.0	13,143	100.1	35,341	99.9

GROSS VEHICLE WEIGHT

The gross vehicle weight (GVW) of commercial vehicles involved in accidents reported in 1989 ranged from under 10,000 pounds to more than 80,000 pounds. Table 3-3 shows that more than 30 percent of all accidents involved vehicles having GVWs between 62,500 and 80,000 pounds; another 23 percent involved GVWs between 27,500 and 45,000 pounds. The data do not reveal whether vehicles in these two weight categories were actually more accident prone, or whether the majority of commercial vehicles (when loaded) fell into these weight categories, and thus would be expected to be involved in a disproportionate number of total accidents.

There appears to be an inverse relationship between GVW and accident fatalities and injuries. In 1989, as GVW increased, the fatality/injury ratio tended to decrease (see Figure 3-2). For instance, accidents involving commercial vehicles with GVWs over 80,000 pounds resulted in 12 percent fewer fatalities/injuries (102 per 100 accidents) than accidents of vehicles under 10,000 pounds (116 per 100 accidents).

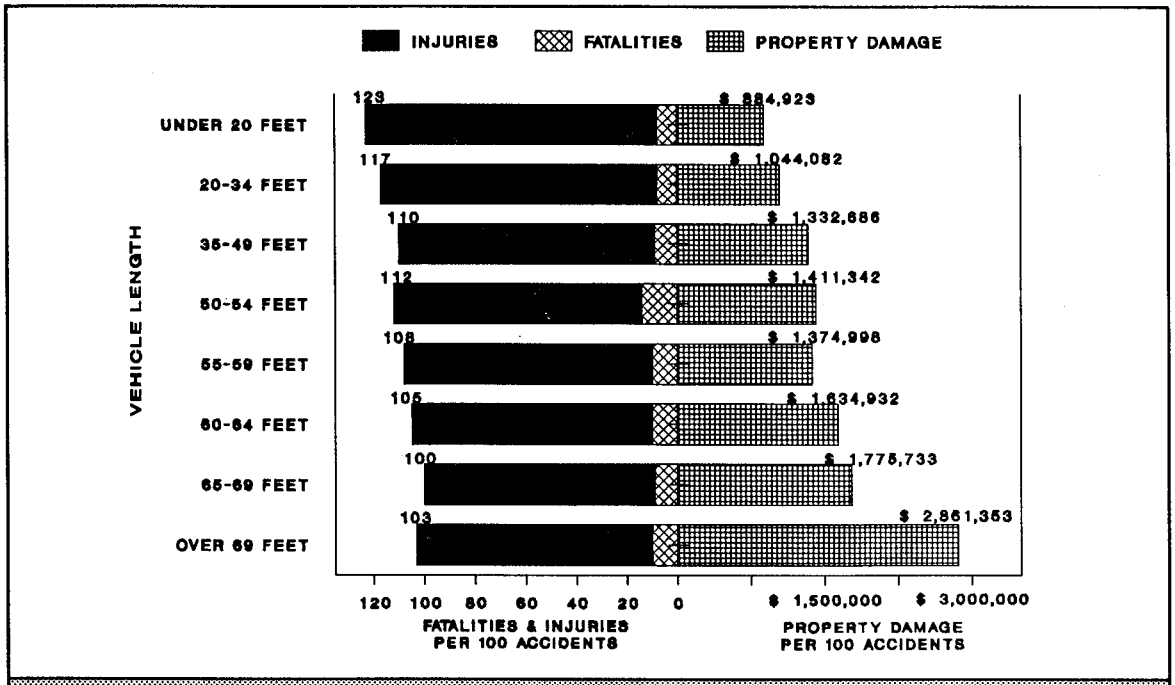

Figure 3-1
Accident Consequences
By Vehicle Length

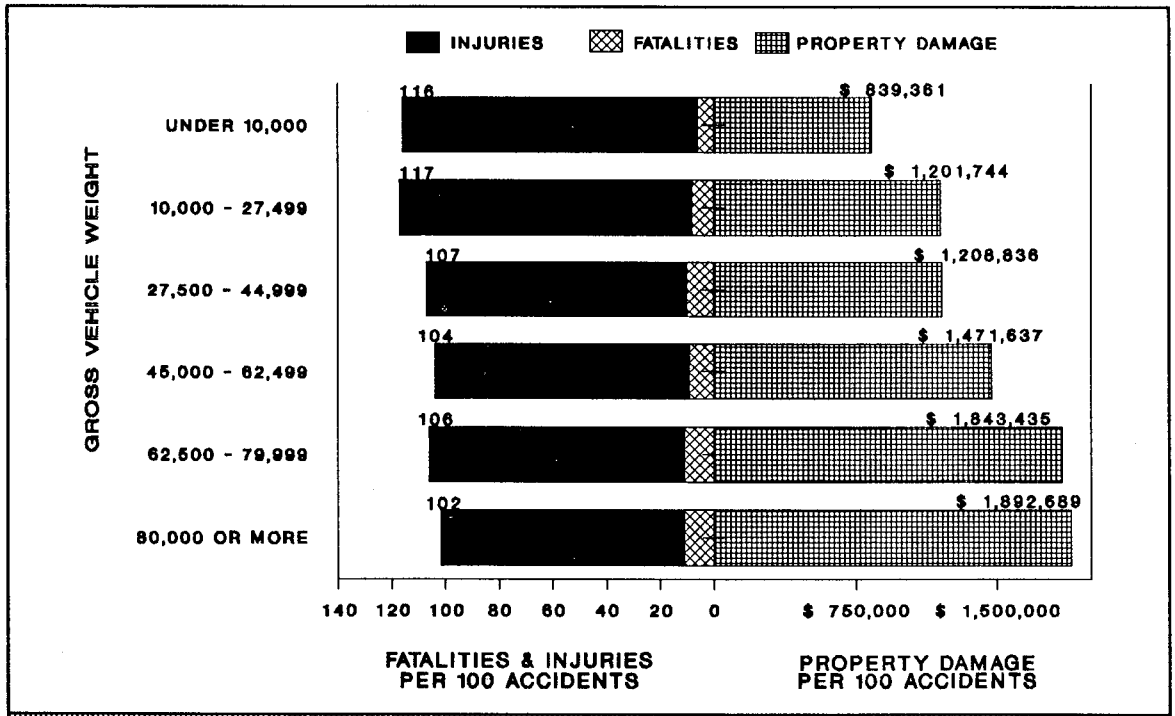

Figure 3-2
Accident Consequences
By Gross Vehicle Weight

Table 3-3
Accident Class Totals
By Gross Vehicle Weight

GROSS VEHICLE WEIGHT IN LBS.	FATAL ACCIDENTS #	FATAL ACCIDENTS %	INJURY ACCIDENTS #	INJURY ACCIDENTS %	PROPERTY DAMAGE ACCIDENTS #	PROPERTY DAMAGE ACCIDENTS %	TOTAL ACCIDENTS #	TOTAL ACCIDENTS %
UNDER 10,000	62	2.3	890	4.6	421	3.2	1,373	3.9
10,000-27,499	302	11.4	2,851	14.6	1,436	10.9	4,589	13.0
27,500-44,999	606	22.9	4,456	22.8	2,995	22.8	8,057	22.8
45,000-62,499	355	13.4	2,672	13.7	1,956	14.9	4,983	14.1
62,500-79,999	869	32.9	5,683	29.1	4,169	31.7	10,721	30.3
80,000 OR MORE	192	7.3	1,142	5.8	973	7.4	2,307	6.5
WEIGHT NOT RPTD.	256	9.7	1,862	9.5	1,193	9.1	3,311	9.4
TOTAL	2,642	99.9	19,556	100.1	13,143	100.0	35,341	100.0

CARGO TYPES

Table 3-4 displays accident class totals by cargo type. In 1989, 31 percent of the commercial vehicles involved in reported accidents were carrying "general freight" at the time of the accidents; 19 percent of the vehicles were empty. Accident class totals, when examined by cargo type, tended to mirror the percentage breakdown of total accidents by cargo type. For example, "solids in bulk" were involved in 2.5 percent of all accidents and 3.0, 2.2, and 2.7 percent of all fatal, injury, and property damage accidents, respectively.

When accidents did occur, the likelihood that these accidents would result in fatalities appeared to vary by cargo classification (Table 3-5). For instance, commercial vehicles carrying solids or liquids in bulk, logs/poles/lumber, or farm products were involved in accidents

Table 3-4
Accident Class Totals
By Cargo Classification

CARGO CLASSIFICATION	FATAL ACCIDENTS #	FATAL ACCIDENTS %	INJURY ACCIDENTS #	INJURY ACCIDENTS %	PROPERTY DAMAGE ACCIDENTS #	PROPERTY DAMAGE ACCIDENTS %	TOTAL ACCIDENTS #	TOTAL ACCIDENTS %
GENERAL FREIGHT	685	25.9	6,203	31.7	4,171	31.7	11,059	31.3
HOUSEHOLD GOODS	82	3.1	559	2.9	459	3.5	1,100	3.1
METAL PRODUCTS	131	5.0	890	4.6	559	4.3	1,580	4.5
HEAVY MACHINERY	48	1.8	252	1.3	276	2.1	576	1.6
MOTOR VEHICLES	29	1.1	243	1.2	255	1.9	527	1.5
DRIVEAWAY-TOWAWAY	8	0.3	73	0.4	54	0.4	135	0.4
GASES IN BULK	10	0.4	83	0.4	56	0.4	149	0.4
SOLIDS IN BULK	79	3.0	438	2.2	355	2.7	872	2.5
LIQUIDS IN BULK	142	5.4	943	4.8	577	4.4	1,662	4.7
EXPLOSIVES	2	0.1	26	0.1	11	0.1	39	0.1
LOGS/POLES/LUMBER	68	2.6	398	2.0	266	2.0	732	2.1
EMPTY	521	19.7	3,686	18.8	2,391	18.2	6,598	18.7
REFRIGERATED FOODS	215	8.1	1,292	6.6	1,045	8.0	2,552	7.2
MOBILE HOME	3	0.1	51	0.3	63	0.5	117	0.3
FARM PRODUCTS	46	1.7	251	1.3	224	1.7	521	1.5
OTHER	527	19.9	3,902	20.0	2,211	16.8	6,640	18.8
CARGO NOT RPTD.	46	1.7	266	1.4	170	1.3	482	1.4
TOTAL	2,642	99.9	19,556	100.0	13,143	100.0	35,341	100.1

Table 3-5
Percent Fatal Accidents
By Cargo Classification

CARGO CLASSIFICATION	FATAL ACCIDENTS	TOTAL ACCIDENTS	% FATAL ACCIDENTS
GENERAL FREIGHT	685	11,059	6.2
HOUSEHOLD GOODS	82	1,100	7.5
METAL PRODUCTS	131	1,580	8.3
HEAVY MACHINERY	48	576	8.3
MOTOR VEHICLES	29	527	5.5
DRIVEAWAY-TOWAWAY	8	135	5.9
GASES IN BULK	10	149	6.7
SOLIDS IN BULK	79	872	9.1
LIQUIDS IN BULK	142	1,662	8.5
EXPLOSIVES	2	39	5.1
LOGS/POLES/LUMBER	68	732	9.3
EMPTY	521	6,598	7.9
REFRIGERATED FOODS	215	2,552	8.4
MOBILE HOME	3	117	2.6
FARM PRODUCTS	46	521	8.8
OTHER	527	6,640	7.9
CARGO NOT RPTD.	46	482	9.5
TOTAL	2,642	35,341	7.5

which produced fatalities approximately 9 percent of the time. In contrast, commercial vehicles transporting mobile homes were involved in accidents which resulted in fatalities only 3 percent of the time.

HAZARDOUS MATERIALS

Less than 6 percent of the accidents reported during 1989 involved commercial vehicles transporting hazardous materials, as defined by the *Hazardous Materials Regulations* (49 CFR 170 – 177). Table 3-6 shows that accidents in which hazardous materials were present resulted in 236 fatalities, 2,060 injuries, and property damage estimated at $42 million. Nearly all the reported accidents involved for-hire carriers—private carriers reported only 40 accidents in which hazardous materials were present.

Figure 3-3 compares the proportion of 1989 accidents, fatalities, injuries, and property damage involving hazardous materials.

MECHANICAL DEFECTS

Less than 4 percent of all carriers reporting accidents during 1989 said that their

Table 3-6
Accidents, Fatalities, Injuries, and Property Damage
Involving Hazardous Materials By Carrier Type

	ACCIDENTS		FATALITIES		INJURIES		PROPERTY DAMAGE	
CARRIER TYPE	#	%	#	%	#	%	$	%
FOR-HIRE	1,958	97.5	225	95.3	2,011	97.6	41,058,359	97.9
PRIVATE	40	2.0	8	3.4	39	1.9	562,705	1.3
TYPE NOT RPTD.	10	0.5	3	1.3	10	0.5	333,802	0.8
TOTAL	2,008	100.0	236	100.0	2,060	100.0	41,954,866	100.0

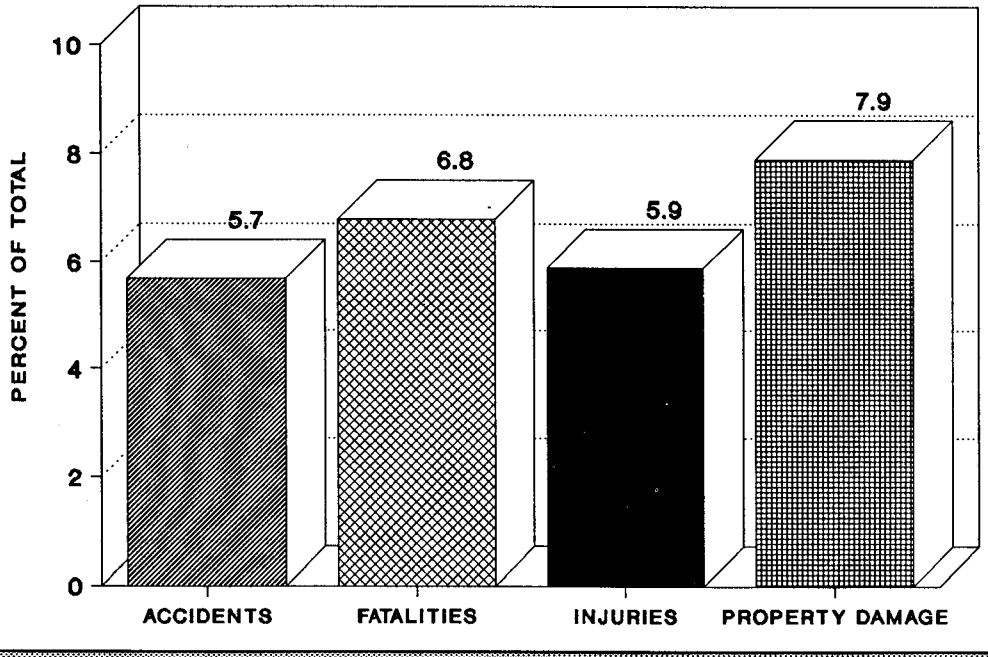

Figure 3-3
Hazardous Materials Accidents as a Percent of Total Accidents, Fatalities, Injuries, and Property Damage

vehicles exhibited mechanical defects or failures at the time of the accidents (Figure 3-4). Figure 3-5 indicates that when mechanical defects were cited, brake failures were most often said to be the cause of the accidents (26 percent), followed by problems with wheels and tires (17 percent).

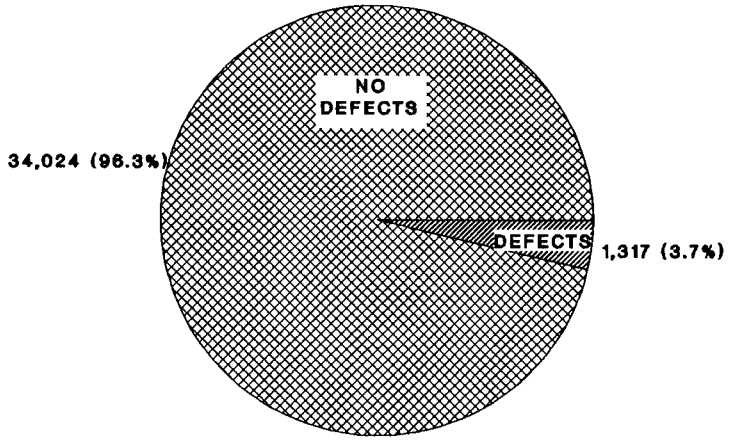

Figure 3-4
Presence of Mechanical Defects In Accidents (N = 35,341)

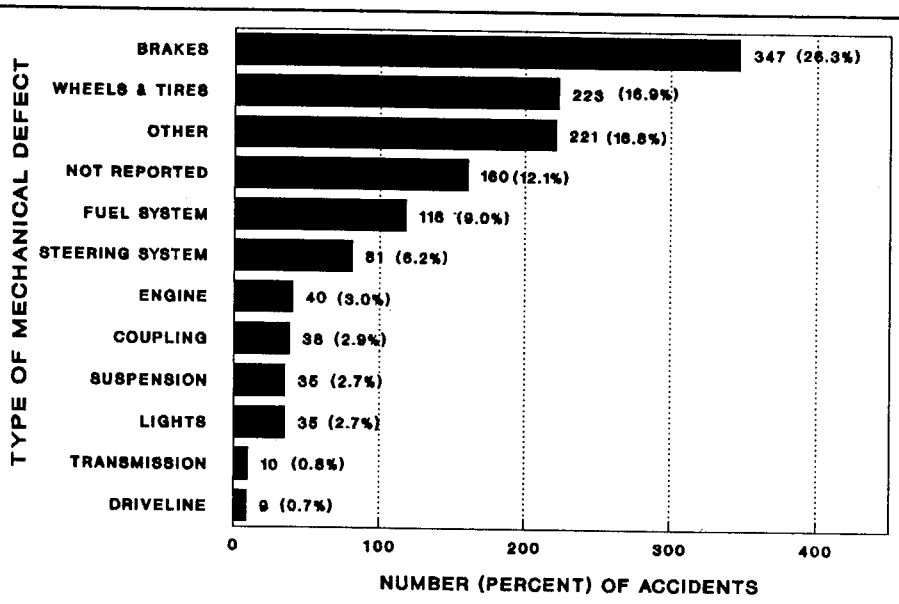

Figure 3-5
Accidents Involving Defects
By Type of Defect
(N = 1,317)

Chapter 4 THE ACCIDENT SETTING

Accident Locale
Environmental Conditions
Time of Day
Day of Week and Month of Year

The typical accident occurred in winter, on a weekday afternoon. At the time of the accident, weather and road conditions were favorable. The accident happened while the truck was travelling on a divided highway through a rural district. When the accident occurred, the truck driver was probably not seriously hurt, but one person not in the truck was injured or, even occasionally, killed.

ACCIDENT LOCALE

Figure 4-1 shows that a larger proportion of the commercial vehicle accidents reported in 1989 occurred in rural districts (55 percent) than in business districts (37 percent). Table 4-1 similarly indicates that more accidents happened on divided highways (50 percent) than on undivided highways (41 percent).

Table 4-1 also reveals, however, that a larger proportion of fatal accidents occurred on undivided highways (50 percent) than on divided highways (45 percent). Furthermore, the data indicate that accidents, when they occurred, were more likely to be fatal on undivided highways than on divided highways. In 1989, 9 percent of all commercial vehicle accidents on undivided highways were fatal; less than 7 percent of the accidents on divided highways were fatal.

Six percent of the reported accidents occurred on expressway entrance and exit ramps (Table 4-2). Whereas 7.5 percent of all commercial vehicle accidents were fatal, only 4.6 percent of all ramp accidents were fatal. Hence, ramp accidents were 39 percent less likely to generate fatalities than commercial vehicle accidents generally.

ENVIRONMENTAL CONDITIONS

Figure 4-2 examines the relationship between weather, road surface, and light conditions. When a carrier reported rain, snow, sleet, fog, or smog at the time of the accident, the weather conditions were classified as "unfavorable." Similarly,

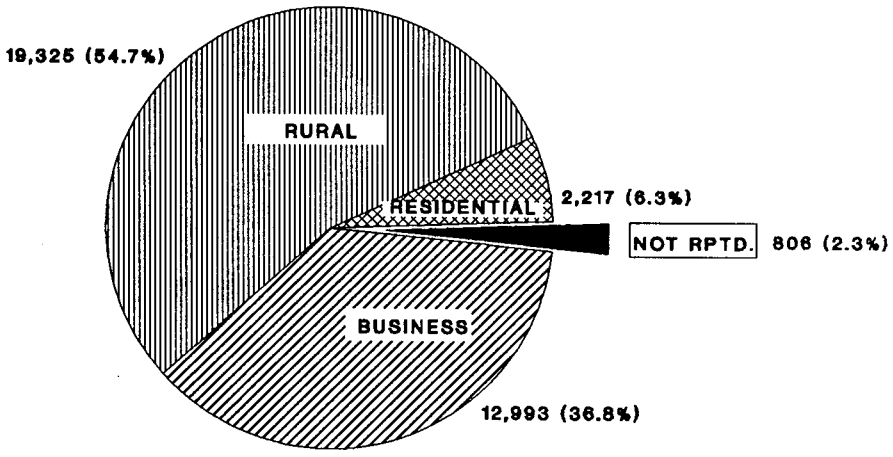

Figure 4-1
Accidents By Land Use
(N = 35,341)

Table 4-1
Accident Class Totals
By Highway Type

	FATAL ACCIDENTS		INJURY ACCIDENTS		PROPERTY DAMAGE ACCIDENTS		TOTAL ACCIDENTS	
	#	%	#	%	#	%	#	%
HIGHWAY TYPE								
DIVIDED	1,187	44.9	10,124	51.8	6,380	48.5	17,691	50.1
UNDIVIDED	1,322	50.0	8,284	42.4	5,038	38.3	14,644	41.4
TYPE NOT RPTD.	133	5.0	1,148	5.9	1,725	13.1	3,006	8.5
TOTAL	2,642	99.9	19,556	100.1	13,143	99.9	35,341	100.0

Table 4-2
Expressway Ramp Accidents

	FATAL ACCIDENTS		INJURY ACCIDENTS		PROPERTY DAMAGE ACCIDENTS		TOTAL ACCIDENTS	
	#	%	#	%	#	%	#	%
ENTRANCE RAMP	54	4.4	708	58.0	457	37.5	1,219	99.9
EXIT RAMP	51	4.8	614	58.1	392	37.1	1,057	100.0
TOTAL RAMP	105	4.6	1,322	58.1	849	37.3	2,276	100.0
ALL ACCIDENTS	2,642	7.5	19,556	55.3	13,143	37.2	35,341	100.0

when a carrier characterized roads as wet, snowy, or icy, road surface conditions were classified as "unfavorable."

Of all commercial vehicle accidents for which environmental conditions were reported in 1989, 62 percent occurred in daylight, 27 percent in the dark, 8 percent at dawn or dusk, and 3 percent under artifical light. Approximately 7 out of 10 accidents occurred under favorable weather/favorable road conditions.

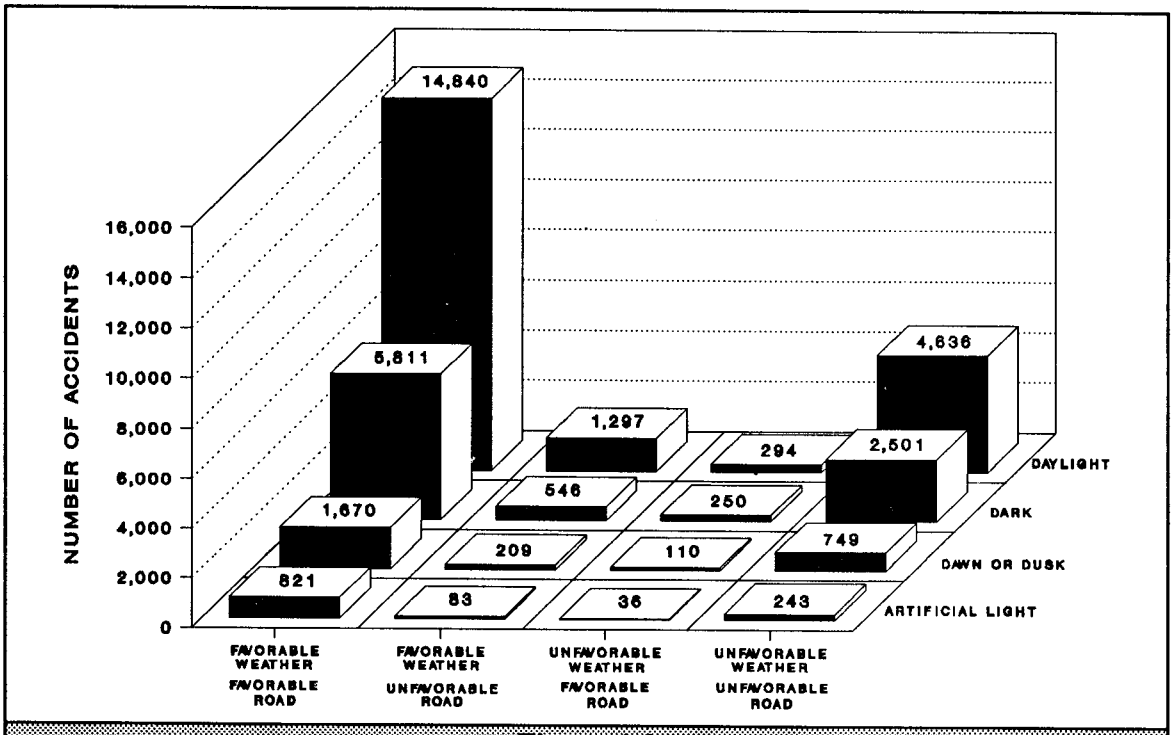

Figure 4-2
Total Accidents
By Light, Weather, and Road Conditions
(N = 34,096)

In fact, more than 4 out of every 10 reported accidents took place in daylight under favorable weather/favorable road conditions.

Figure 4-3 compares accident consequences generated during daylight under favorable weather/favorable road conditions to those produced in the dark under unfavorable weather/unfavorable road conditions. Interestingly, accidents which occurred under ideal environmental conditions resulted in more fatalities/injuries (107 per 100 accidents) than did accidents which happened under adverse conditions (102 per 100 accidents). Was this because drivers were more cautious—and drove slower—under adverse environmental conditions so that accidents, even when they occurred, were less severe? Or was it simply that there was less traffic on the highways—and consequently fewer opportunities for collisions—when environmental conditions were poorest? In examining these data, it should be remembered that they are based on the environmental conditions occurring at the time of the accidents, as reported by the carriers themselves. There is, of course, the possibility that reports of favorable weather/favorable road conditions were exaggerated, given that the *FMCSRs* (49 CFR 392.14) specifically prohibit the operation of commercial vehicles under "sufficiently dangerous" conditions.

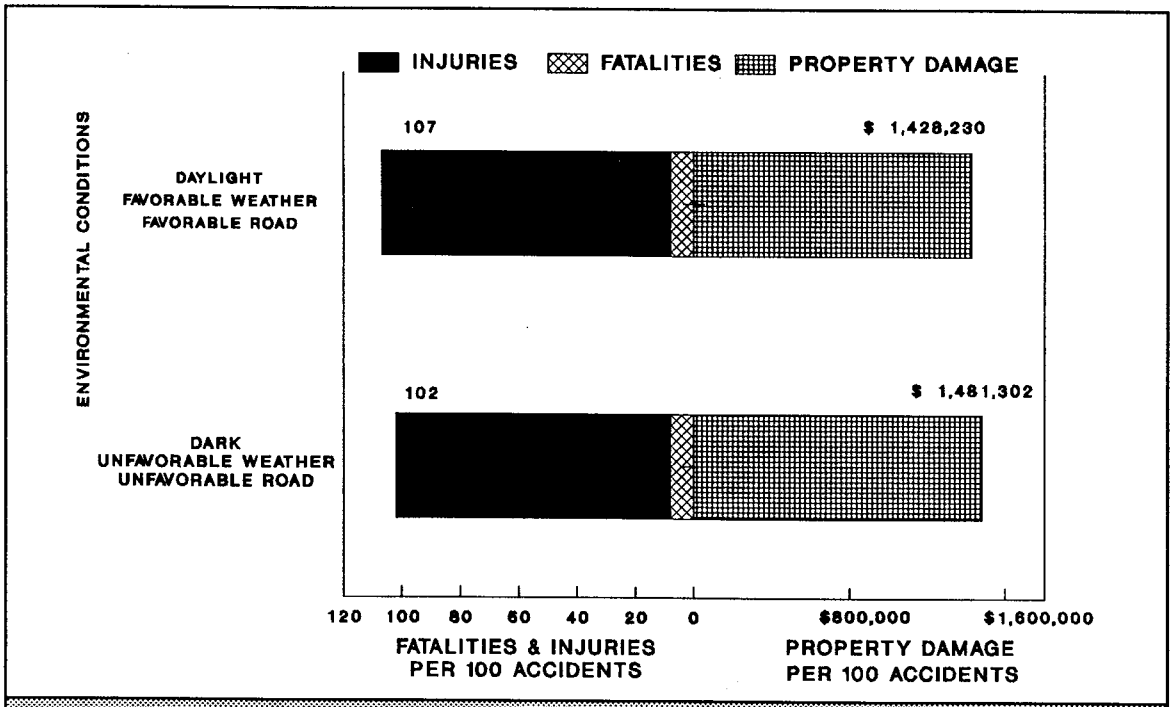

Figure 4-3
Accident Consequences
By Environmental Conditions

TIME OF DAY

Four out of every 5 commercial vehicle accidents reported in 1989 occurred between 5 a.m. and 8 p.m., the hours during which traffic normally flowed its heaviest. The fewest accidents occurred during the evening and early morning hours, 8 p.m to 5 a.m.

Figures 4-4 through 4-6 compare accident experience by time of day. On weekdays, total accidents appeared to fluctuate with the general flow of traffic, peaking at noon and again at 2 p.m. (Figure 4-4); not surprisingly, counts of weekend accidents showed less variability, regardless of time of day. Collision accidents (Figure 4-5) peaked between 12 noon and 4 p.m., whereas non-collision accident counts were uniformly high from 5 a.m. to 4 p.m. Reported accidents involving both over-the-road vehicles and vehicles transporting goods locally occurred in much greater numbers during the day than at night (Figure 4-6). This was less true for over-the-road accidents, however. While the number of accidents involving local vehicles was nearly eight times higher at noon than at midnight, over-the-road accidents were two times higher at noon than at midnight. This lower variability in over-the-road accidents may reflect the round-the-clock orientation of long-distance haulers.

Figure 4-7 examines fatalities/injuries for truck occupants and truck non-occupants by time of day. In general, the data show that truck occupants were most likely to be killed or injured in accidents which

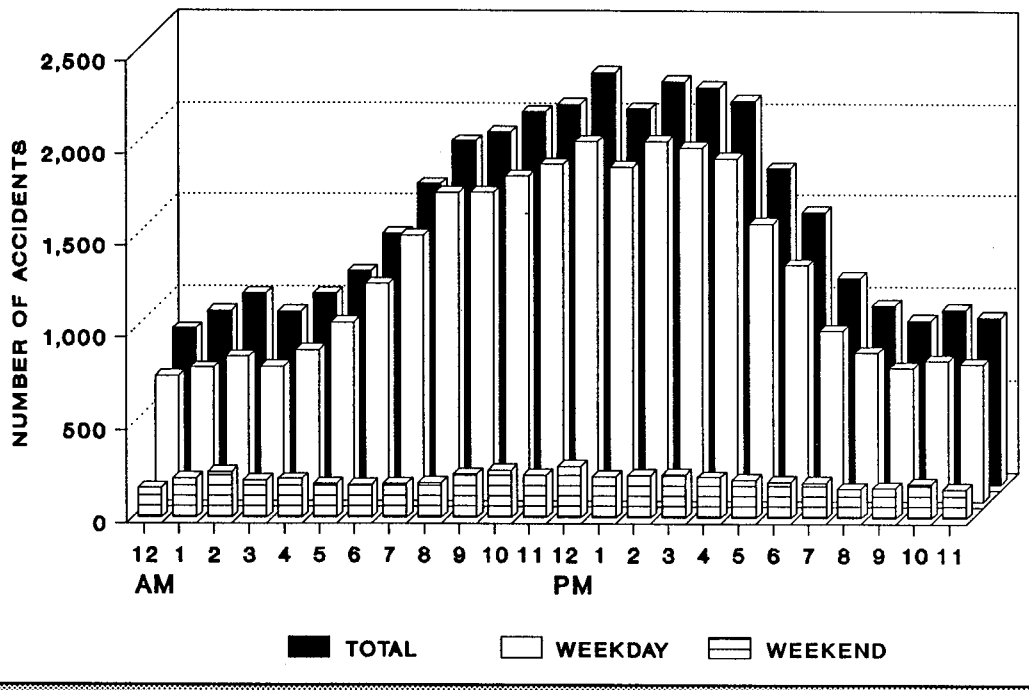

Figure 4-4
Accidents By Time and Type of Day
(N = 35,341)

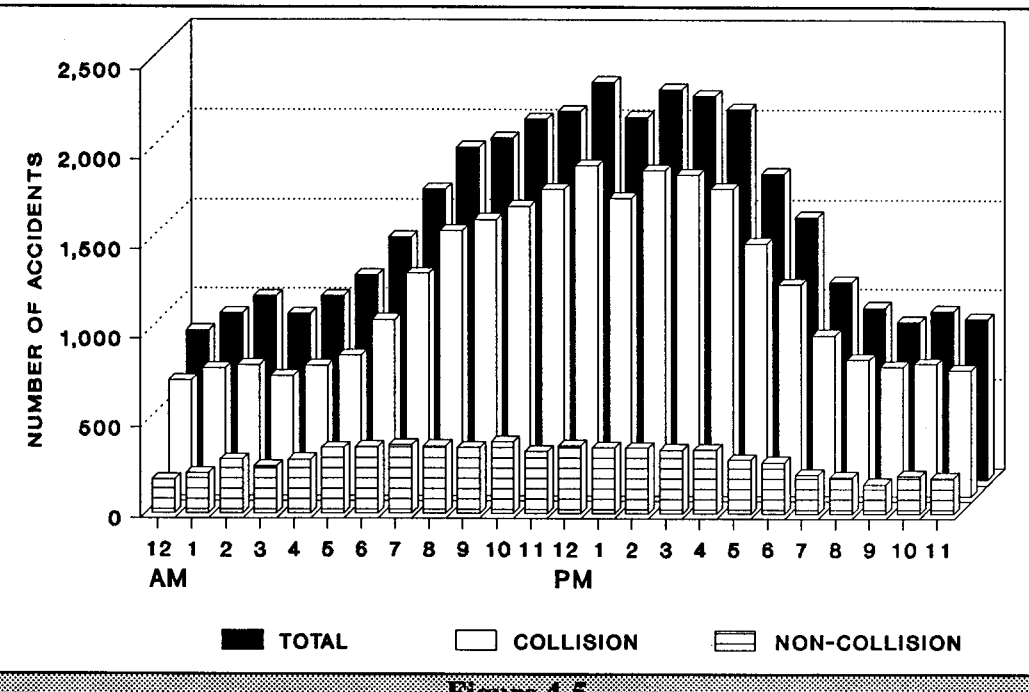

Figure 4-5
Accidents By Time of Day and Accident Type
(N = 35,341)

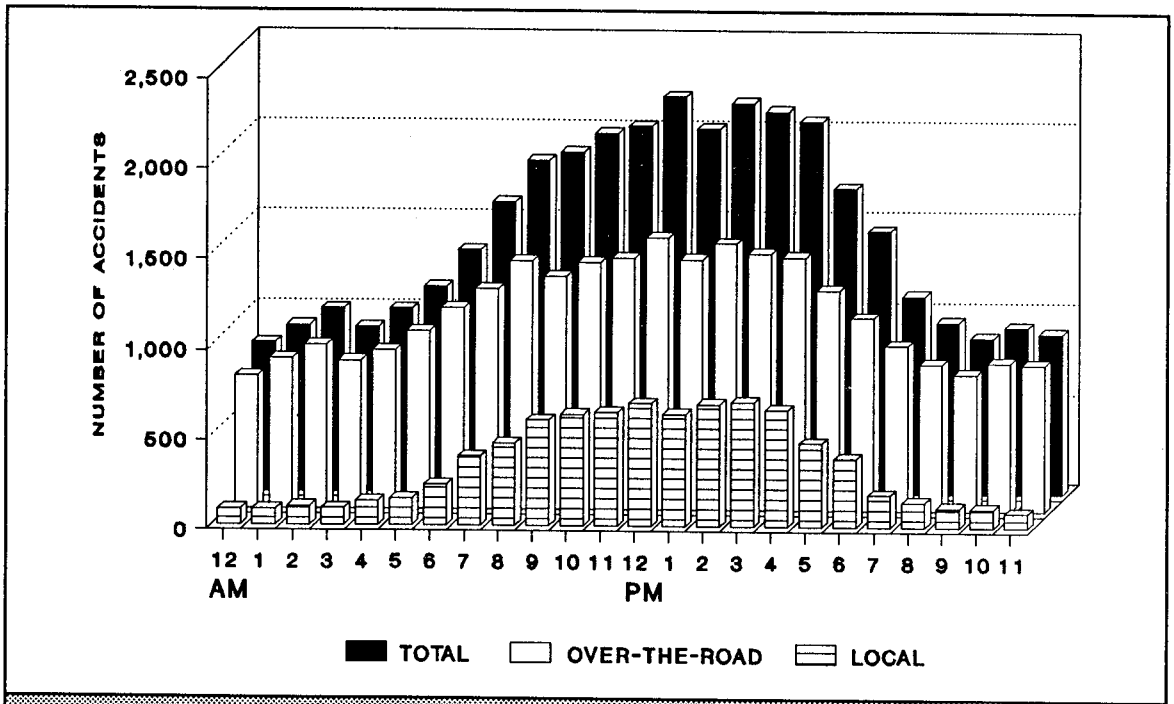

Figure 4-6
Accidents By Time of Day and Trip Type
(N = 35,341)

occurred during the predawn hours when, percentage-wise, there were more non-collision accidents. For instance, truck drivers were 53 percent more likely to be killed or injured in accidents which happened between 1 and 6 a.m. than between 1 and 6 p.m. The pattern for truck non-occupants was different: persons not in the truck at the time of the accident were killed or injured at a rate 24 percent higher between 1 and 6 p.m. than between 1 and 6 a.m.

DAY OF WEEK AND MONTH OF YEAR

Figures 4-8 and 4-9 compare the percentages of 1989 accidents by day of week and month of year, respectively. As expected, considerably fewer accidents involving commercial vehicles occurred on Saturdays and Sundays than on other days of the week (Figure 4-8). Also, the greatest numbers of accidents were reported for the months of February, March, and December; the fewest accidents occurred in April, July, and September (Figure 4-9).

Table 4-3 displays total accidents, fatalities, injuries, and property damage by carrier type and month.

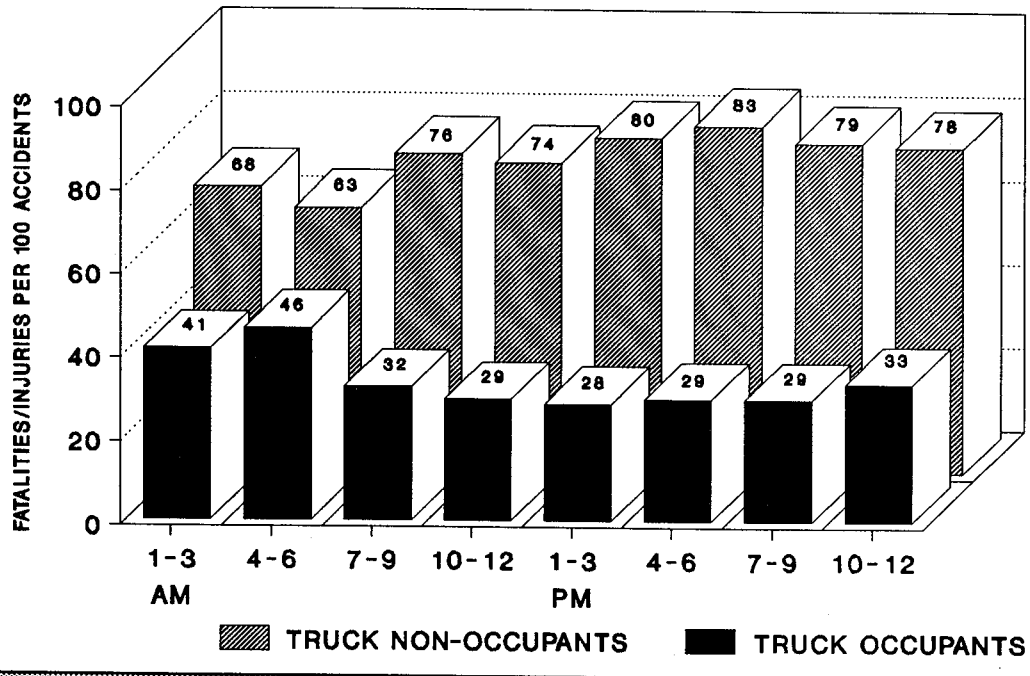

Figure 4-7
Fatalities and Injuries
By Time of Day

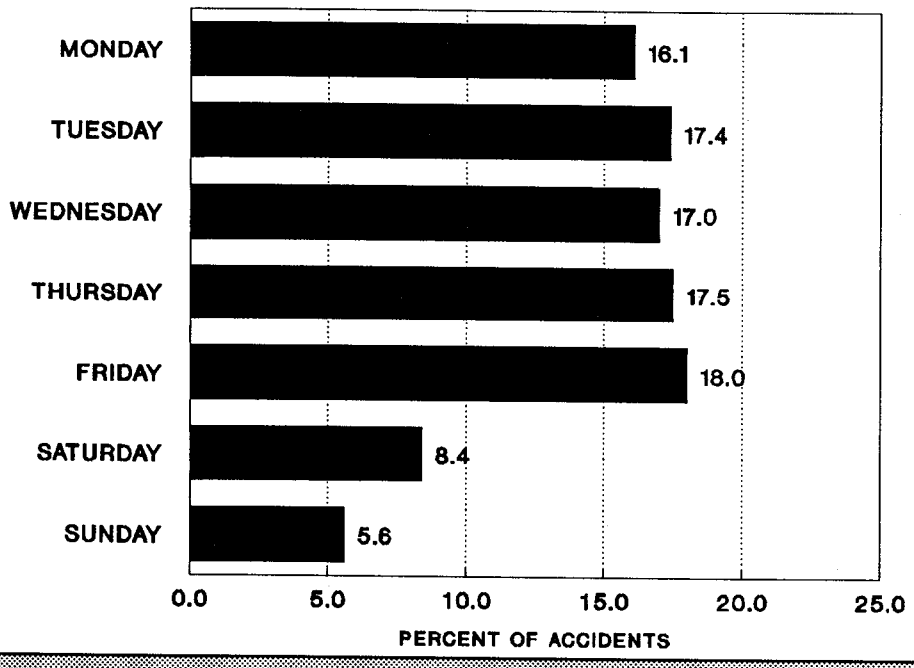

Figure 4-8
Percent of Total Accidents By Day of Week
(N = 35,341)

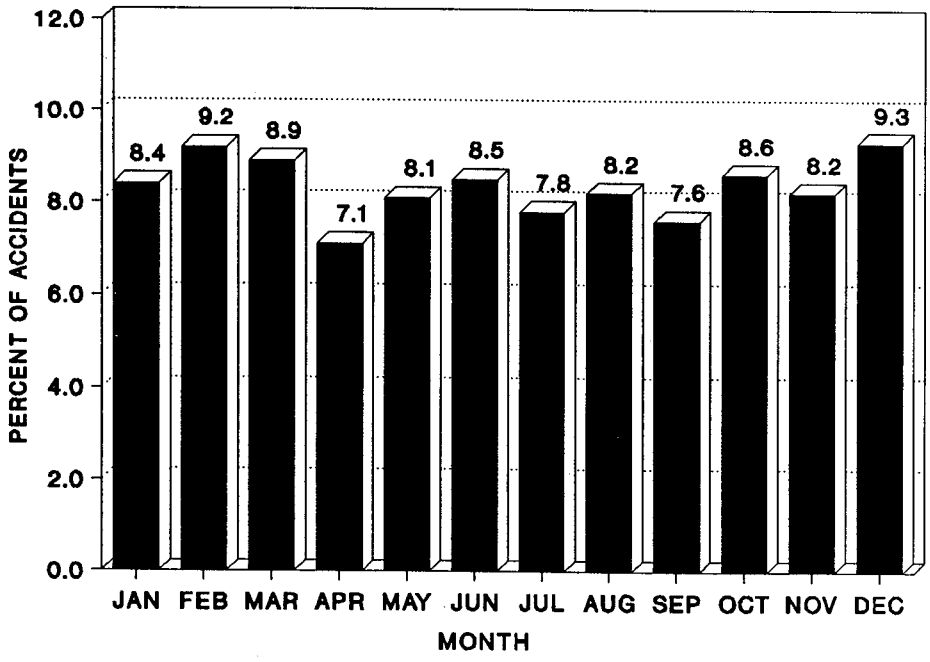

Figure 4-9
Percent of Total Accidents
By Month
(N = 35,341)

Table 4-3
Accidents, Fatalities, Injuries, and Property Damage
By Carrier Type and Month

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
ACCIDENTS													
FOR-HIRE	2,877	3,145	3,063	2,429	2,829	2,951	2,715	2,835	2,619	2,963	2,833	3,229	34,488
PRIVATE	78	92	87	55	44	52	47	62	66	62	47	53	745
TYPE NOT RPTD.	8	10	9	8	4	14	9	9	9	7	9	12	108
TOTAL	2,963	3,247	3,159	2,492	2,877	3,017	2,771	2,906	2,694	3,032	2,889	3,294	35,341
FATALITIES													
FOR-HIRE	231	229	274	244	233	280	366	304	263	312	277	311	3,324
PRIVATE	14	10	11	12	6	3	6	13	16	11	7	10	119
TYPE NOT RPTD.	0	0	0	0	0	1	0	0	0	0	3	4	8
TOTAL	245	239	285	256	239	284	372	317	279	323	287	325	3,451
INJURIES													
FOR-HIRE	2,499	2,916	2,974	2,391	2,738	2,936	2,743	2,958	2,652	3,020	2,837	3,165	33,829
PRIVATE	88	64	98	55	46	46	34	47	50	72	51	61	712
TYPE NOT RPTD.	8	13	8	8	4	16	11	9	13	4	7	11	112
TOTAL	2,595	2,993	3,080	2,454	2,788	2,998	2,788	3,014	2,715	3,096	2,895	3,237	34,653
PROPERTY DAMAGE*													
FOR-HIRE	38,368	41,206	45,849	36,653	37,740	44,306	39,317	41,785	39,934	43,590	39,186	50,563	498,497
PRIVATE	1,251	1,409	1,077	3,911	554	853	1,566	820	16,129**	1,617	1,105	976	31,268
TYPE NOT RPTD.	209	140	132	125	27	330	206	222	140	97	143	132	1,903
TOTAL	39,828	42,755	47,058	40,689	38,321	45,489	41,089	42,827	56,203	45,304	40,434	51,671	531,668

* In thousands (000's) of dollars.
** During September, a carrier reported a single accident involving a truck and train which resulted in $15 million in property damage.

Chapter 5

THE ACCIDENT

Accident Type Overview
Collision Accidents
Non-Collision Accidents

The typical accident entailed a collision between a commercial vehicle and automobile. Nearly 7 out of every 10 collisions resulted in one or more fatalities or injuries. In general, accident severity appeared to be determined by a variety of factors, including what the commercial vehicle was doing just prior to the accident. For instance, when the truck ventured into an opposing lane of traffic, the ensuing collision tended to be the most severe.

ACCIDENT TYPE OVERVIEW

Almost 80 percent of the accidents reported in 1989 involved collisions. Overall, collision accidents were responsible for 90 percent of the fatalities, 83 percent of the injuries, and 71 percent of the property damage reported. Table 5-1 breaks down accidents and their consequences by accident type.

Percentage breakdowns of collision, non-collision, and total accidents by accident class are shown in Figure 5-1.

Table 5-1
Accidents, Fatalities, Injuries, and Property Damage By Accident Type

	COLLISIONS		NON-COLLISIONS		NOT REPORTED		TOTAL	
	#	%	#	%	#	%	#	%
ACCIDENTS								
FATAL	2,408	91.1	227	8.6	7	0.3	2,642	100.0
INJURY	16,127	82.5	3,374	17.3	55	0.3	19,556	100.1
PROPERTY DAMAGE	9,543	72.6	3,550	27.0	50	0.4	13,143	100.0
TOTAL	28,078	79.4	7,151	20.2	112	0.3	35,341	99.9
FATALITIES	3,108	90.1	332	9.6	11	0.3	3,451	100.0
INJURIES	28,916	83.4	5,646	16.3	91	0.3	34,653	100.0
PROPERTY DAMAGE	$379,482,517	71.4	$151,006,661	28.4	$1,176,698	0.2	$531,665,876	100.0

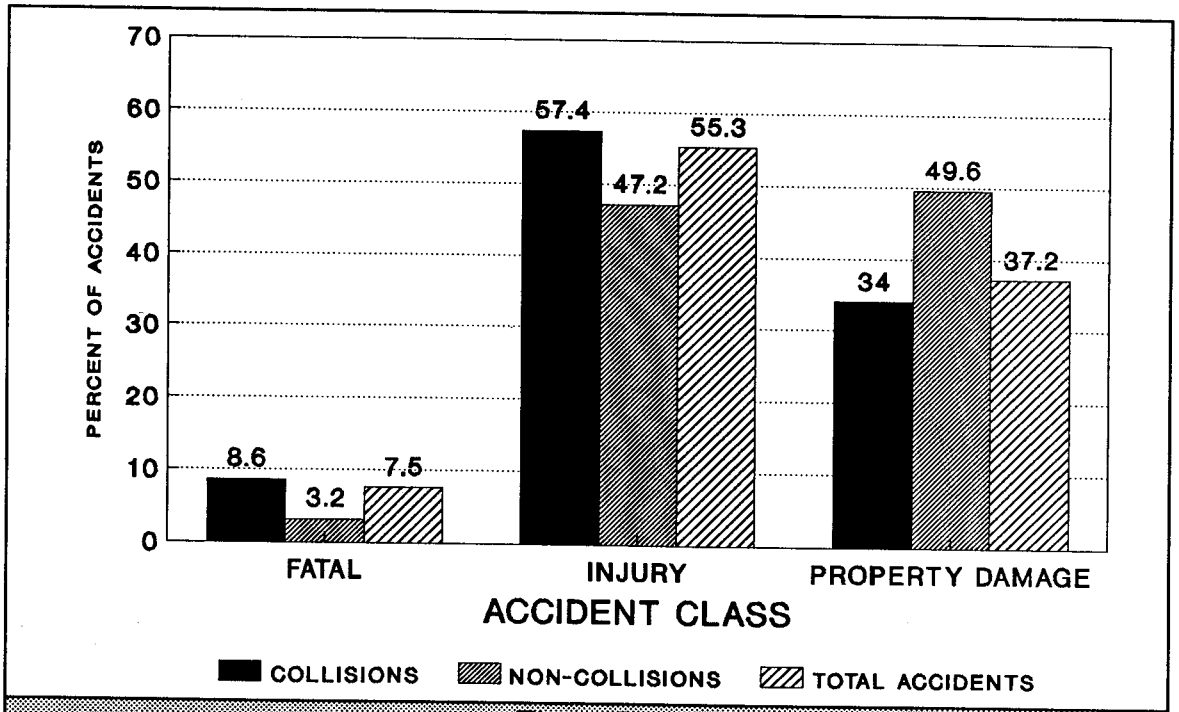

Figure 5-1
Collision, Non-Collision, and Total Accidents By Accident Class

Table 5-2
Accident Consequences By Accident Type

	FATALITIES #	INJURIES #	PROPERTY DAMAGE $
PER 100 COLLISION ACCIDENTS	11	103	1,351,530
PER 100 NON-COLLISION ACCIDENTS	5	79	2,111,686
PER 100 ACCIDENTS	10	98	1,504,388

Sixty-six percent of the collision accidents resulted in fatalities or injuries, while only 50 percent of the non-collision accidents were as severe. Collisions were nearly three times more likely to result in fatalities, and 22 percent more likely to result in injuries.

Accident severity rates are compared by accident type in Table 5-2. While fatalities and injuries were greater in collisions, the property damage rate was 1.6 times higher in non-collision accidents.

COLLISION ACCIDENTS

Table 5-3 indicates that, in 1989, 59 percent of all collision accidents occurred when commercial vehicles and automobiles collided. In fact, truck/automobile accidents accounted for 62 percent of all collision-induced fatalities, 66 percent of the injuries, and

44 percent of the property damage. Although truck/pedestrian accidents comprised less than 2 percent of all collisions, they resulted in nearly 6 percent of the collision-induced fatalities. Similarly, truck/bus accidents accounted for just 0.5 percent of collisions, but nearly 2 percent of the collision-induced injuries.

Table 5-3
Collision Accidents, Fatalities, Injuries, and Property Damage By Type of Collision

	ACCIDENTS		FATALITIES		INJURIES		PROPERTY DAMAGE	
	#	%	#	%	#	%	$	%
OTHER OBJECT INVOLVED								
COMMERCIAL TRUCK	4,768	17.0	386	12.4	4,529	15.7	94,685,970	25.0
FIXED OBJECT	3,708	13.2	241	7.8	2,172	7.5	61,532,261	16.2
AUTOMOBILE	16,509	58.8	1,938	62.4	18,935	65.5	165,705,556	43.7
PEDESTRIAN	415	1.5	174	5.6	255	0.9	1,901,977	0.5
BUS	147	0.5	11	0.4	535	1.9	1,840,147	0.5
TRAIN	211	0.8	35	1.1	230	0.8	24,685,514	6.5
BICYCLIST	109	0.4	29	0.9	94	0.3	606,528	0.2
ANIMAL	178	0.6	11	0.4	88	0.3	2,690,787	0.7
MOTORCYCLE	149	0.5	47	1.5	136	0.5	801,314	0.2
OTHER	1,706	6.1	225	7.2	1,768	6.1	22,880,994	6.0
OBJECT NOT RPTD.	178	0.6	11	0.4	174	0.6	2,151,469	0.6
TOTAL	28,078	100.0	3,108	100.1	28,916	100.1	379,482,517	100.1

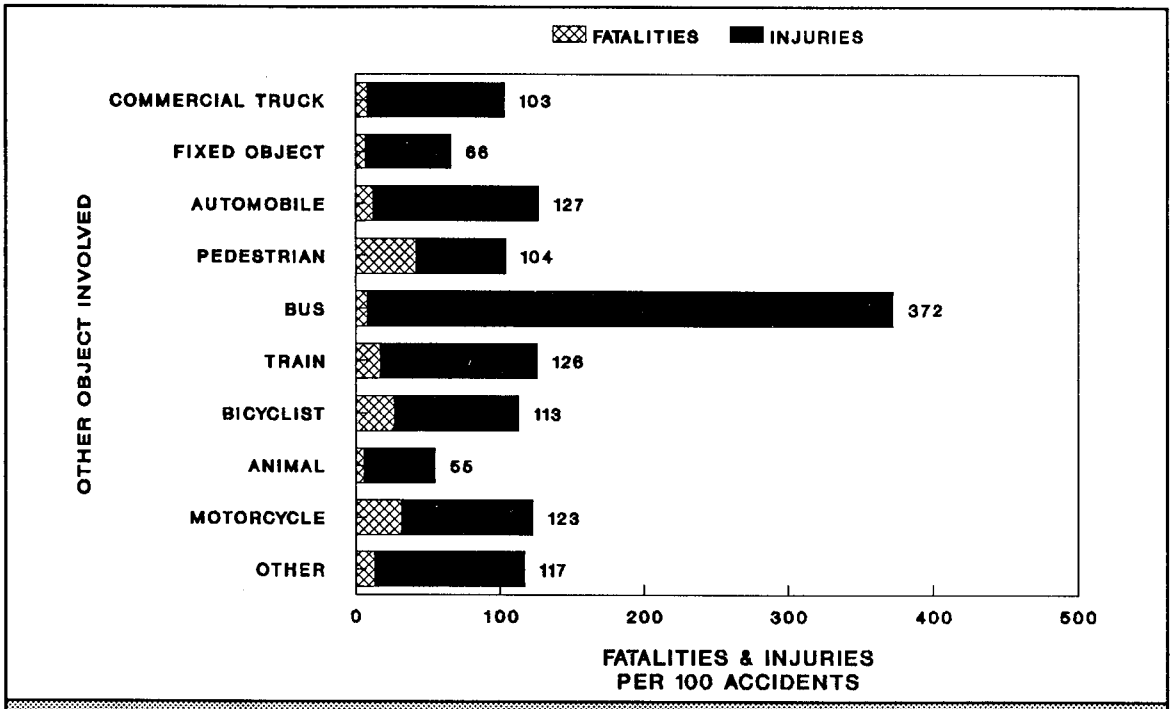

Figure 5-2
Fatalities and Injuries Per 100 Collision Accidents

Figure 5-2 examines fatalities/injuries per 100 accidents for collisions involving different combinations of vehicles, persons, and objects. Truck/bus accidents were the most severe, generating 372 fatalities/injuries per 100 accidents. One might reasonably infer that this was due largely to the disproportionately high number of bus passengers potentially exposed whenever truck/bus accidents occurred.

Accidents were frequently the most severe when commercial vehicles collided with pedestrians and other persons not protected inside vehicles. Hence, truck collisions with pedestrians, bicyclists, and motorcyclists generally resulted in higher rates of fatalities per accident than did truck collisions with other trucks, automobiles, or buses.

The estimated value of property damaged in collisions tended to vary according to the value of the property potentially exposed in each accident. Thus, the average value of property damaged in truck/train collisions was considerably higher than the value of property damaged in truck/truck collisions (Figure 5-3). Similarly, the average value of property damaged in truck/truck collisions was more than that damaged in truck/automobile collisions.

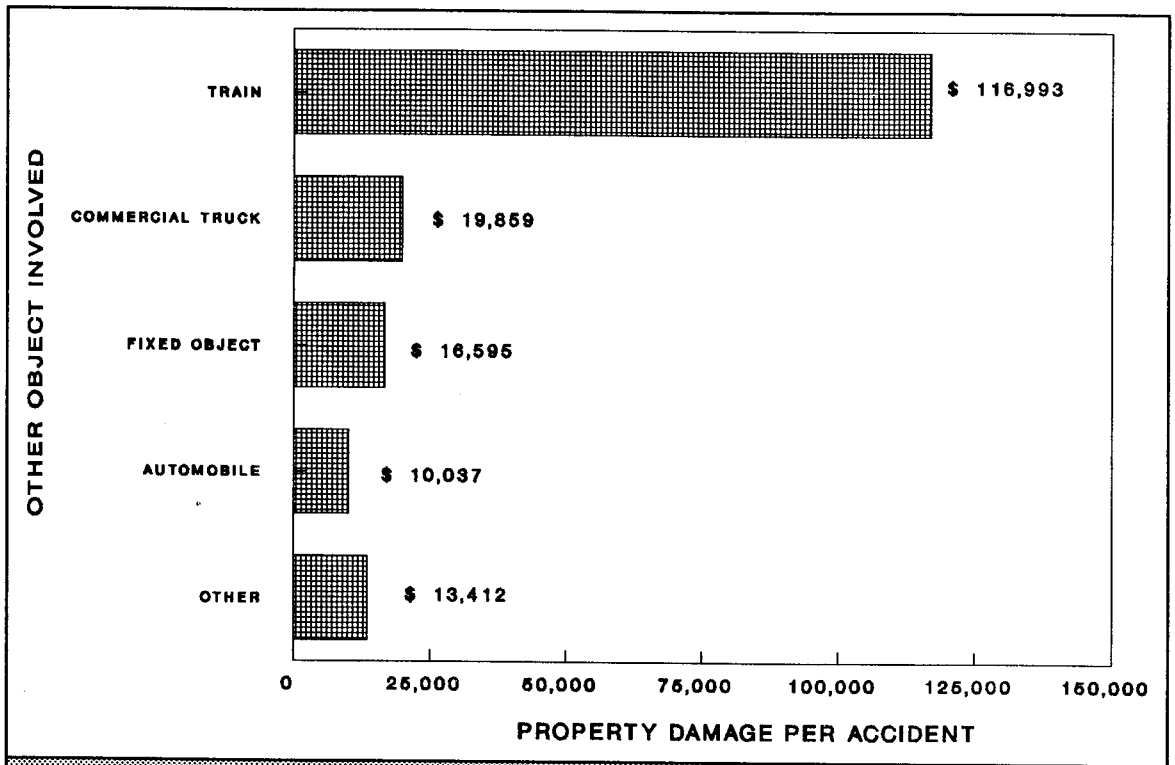

Figure 5-3
Property Damage Per Accident
By Type of Collision

Table 5-4
Non-Collision Accidents, Fatalities, Injuries, and Property Damage By Type of Non-Collision

	ACCIDENTS		FATALITIES		INJURIES		PROPERTY DAMAGE	
TYPE OF NON-COLLISION	#	%	#	%	#	%	$	%
OVERTURN	3,114	43.5	117	35.2	2,837	50.2	74,192,637	49.1
RAN OFF THE ROAD	1,848	25.8	150	45.2	1,610	28.5	44,075,999	29.2
JACKKNIFE	1,134	15.9	11	3.3	608	10.8	13,495,510	8.9
FIRE	214	3.0	0	0.0	30	0.5	7,299,120	4.8
LOSS OF CARGO	164	2.3	11	3.3	66	1.2	2,560,531	1.7
CARGO SHIFT	107	1.5	1	0.3	73	1.3	2,228,035	1.5
SEPARATION OF UNITS	74	1.0	2	0.6	24	0.4	1,302,056	0.9
TYPE NOT RPTD.	300	4.2	29	8.7	255	4.5	3,387,968	2.2
OTHER	196	2.7	11	3.3	143	2.5	2,464,805	1.6
TOTAL	7,151	99.9	332	99.9	5,646	99.9	151,006,661	99.9

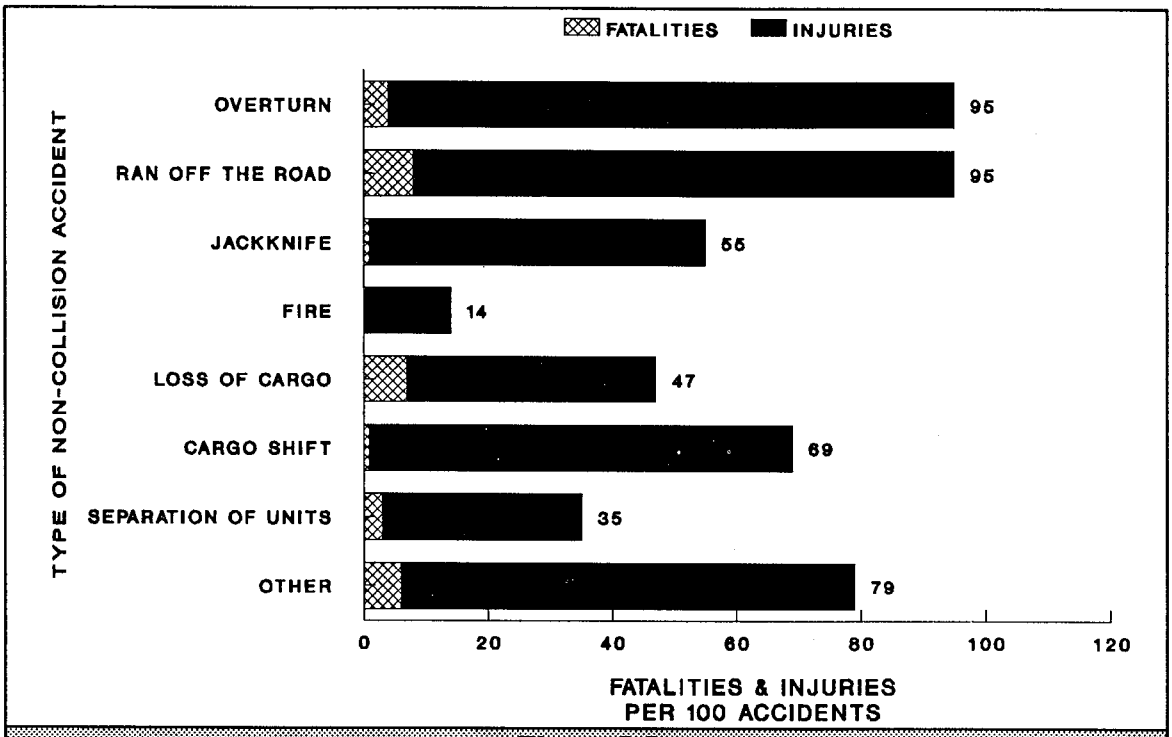

Figure 5-5
Fatalities and Injuries Per 100 Non-Collision Accidents

Accident severity by the types of "movement" in which commercial vehicles were engaged just before the collisions occurred is summarized in Figure 5-4. In general, accidents were most severe when the commercial vehicles were reported to have crossed into opposing lanes of traffic. The head-on collision resulting from lane crossings produced, on average, 206 fatalities/injuries per 100 accidents.

In reviewing the data in figure 5-4, note that the vehicle movements shown pertain to the commercial vehicles only; the movements of other vehicles involved in the accidents are not presented.

NON-COLLISION ACCIDENTS

As indicated in Table 5-4, most 1989 non-collision accidents were the result of one of three actions: truck overturns (44 percent), trucks running off the road (26 percent), and truck jackknifes (16 percent). Overturns and trucks running off the road accounted for nearly 4 out of every 5 non-collision fatalities and injuries.

Non-collision accident severity rates ranged from 14 fatalities/injuries per 100 accidents when fires were the primary accident event, to 95 fatalities/injuries per 100 accidents when trucks ran off the road or overturned (Figure 5-5). Although fires were the least severe type of non-collision accident, they were the most costly in terms of property damage, averaging $34,000 per accident (Figure 5-6).

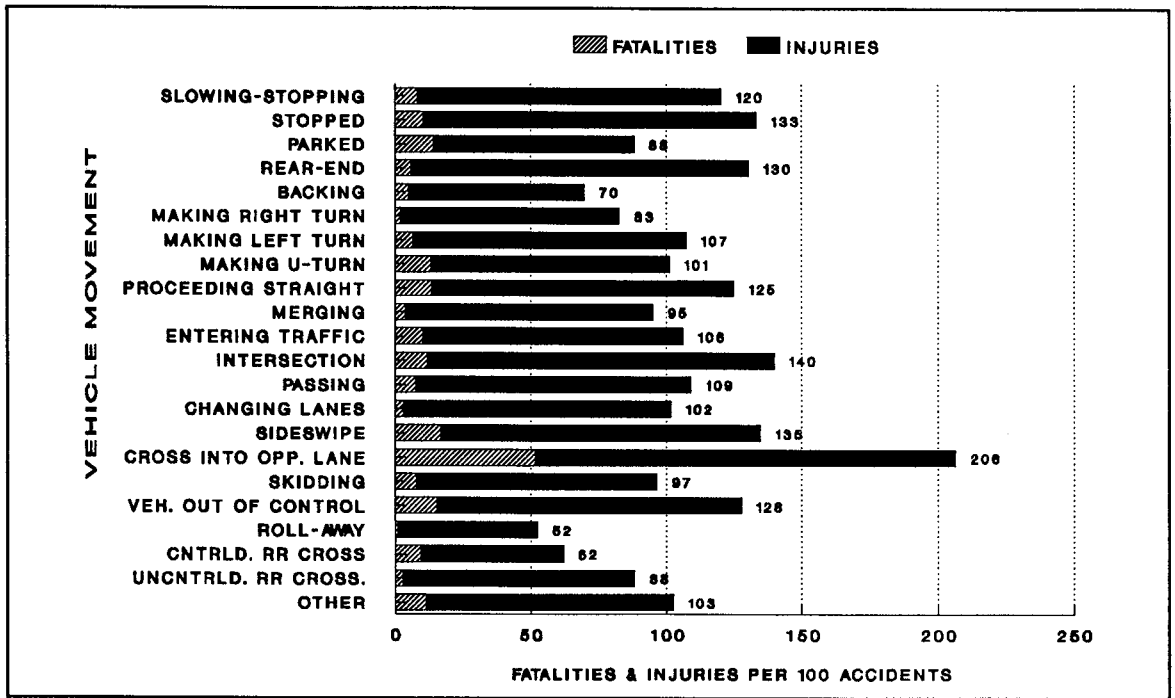

Figure 5-4
Fatalities and Injuries in Vehicular Collisions By Reporting Vehicle Movement

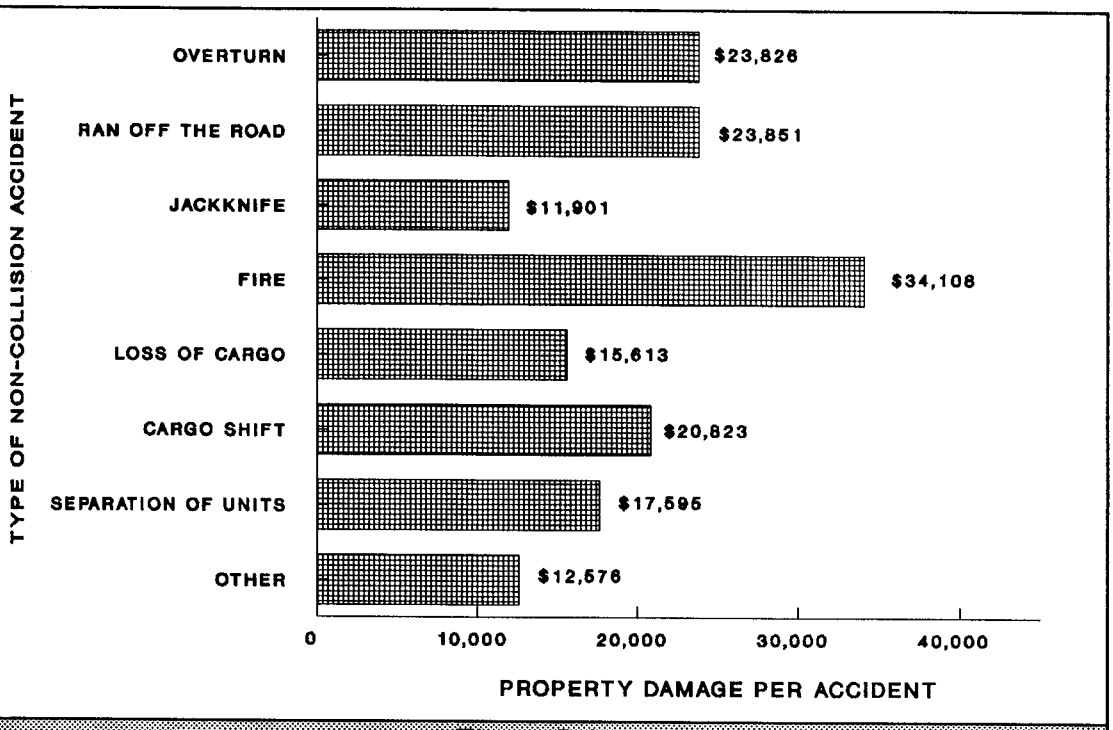

Figure 5-6
Property Damage Per Accident
By Type of Non-Collision

APPENDIX

Glossary
MCS 50-T Accident Report Form
Common Vehicle Configurations

GLOSSARY

Accident Classes. Used to categorize commercial vehicle accidents according to accident severity. The three classes referred to in this report are: fatal accidents, injury accidents, and property damage accidents.

Accident Consequences. The physical results of motor vehicle accidents. Consequences include fatalities, injuries, and property damage.

Accident Severity. Measures the seriousness of an accident according to the type and quantity of the accident's consequences. In this report, fatalities are more severe than injuries, and injuries are more severe than property damage. See also "Fatalities/Injuries."

Accident Type. "Collision" or "non-collision."

Carrier Type. "For-hire" or "private."

Collision Accident. An accident involving a collision between a commercial motor vehicle and another object. Collision objects include trains, other motor vehicles, pedestrians, bicyclists, animals, and fixed objects.

Driveaway-Towaway. Refers to a carrier operation, such as a fleet of tow trucks, used to transport other vehicles, when some or all wheels of the vehicles being transported touch the road surface (49 CFR 390.9).

Fatal Accident. An accident for which at least one fatality was reported.

Fatalities/Injuries. Refers to the average number of fatalities and injuries which occurred per one hundred accidents. Frequently used in this report as an index of accident severity.

Fatality. A death resulting from a motor vehicle accident.

Fatality Rate. The average number of fatalities which occurred per accident or per one hundred accidents.

50-T Report. Form MCS 50-T, the *Motor Carrier Accident Report (Property-Carrying).* Commercial carriers subject to the Department of Transportation Act are required to submit a 50-T report to the Federal Highway Administration on each reportable accident in which they are involved.

FMCSRs. *Federal Motor Carrier Safety Regulations.* The FMCSRs are contained in the *Code of Federal Regulations*, Title 49, Chapter III, Subchapter B.

For-Hire Carrier. A commercial motor carrier whose primary business activity is the transportation of property by motor vehicle for compensation.

ICC Authorized Carrier. A for-hire motor carrier engaged in interstate or foreign commerce, subject to economic regulation by the Interstate Commerce Commission.

ICC Exempt Carrier. A for-hire motor carrier transporting commodities or conducting operations not subject to economic regulation by the Interstate Commerce Commission.

Injury. Bodily injury resulting from a motor vehicle accident. To qualify as an

"injury," the injured person must require and receive medical treatment away from the accident scene.

Injury Accident. An accident for which at least one injury, but no fatalities, was reported.

Injury Rate. The average number of non-fatal injuries per accident or per one hundred accidents.

Jackknife. A non-collision accident in which a tractor and its trailer slide together, forming a V-shaped angle of 90 degrees or less.

Local Trip. An intracity or short mileage trip by commercial motor vehicle.

Non-Collision Accident. A motor vehicle accident which does not involve a collision. Non-collision accidents include jackknifes, overturns, fires, cargo shifts and spills, and incidents in which trucks run off the road.

Over-the-Road Trip. An intercity movement by commercial motor vehicle.

Private Carrier. A commercial motor carrier whose highway transportation activities are incidental to, and in furtherance of, its primary business activity.

Property Damage. The actual or estimated dollar value of vehicle, cargo, and other property damage incurred in motor vehicle accidents.

Property Damage Accident. An accident for which property damage of $4,400 or more, but no fatalities or injuries, was reported.

Property Damage Rate. The average amount of property damage per accident or per one hundred accidents.

Property Damage Threshold. The amount of property damage used to determine whether an accident not involving fatalities or injuries is reportable under the *FMCSRs*. In 1989, the property damage threshold was $4,400.

Reportable Accident. A motor vehicle accident involving a carrier subject to the Department of Transportation Act, which results in a fatality, injury, or property damage of $4,400 or more (49 CFR 394.3).

Trip Type. "Local" or "over-the-road."

Vehicle Configuration. The combination of vehicular units comprising a commercial motor vehicle. The most common vehicle configurations are depicted on page 50.

OMB NO: 2125-0526
(Average completion time for this form is 1 hour)

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

MOTOR CARRIER ACCIDENT REPORT

Original and two copies of MCS 50-T shall be filed with the Director, Regional Motor Carrier Safety Office, FHWA, as required by 394.9. Copy shall be retained in carrier's file. Circle or (x) appropriate boxes below.

1. Name of carrier *(Corporate business name)*

2. Principal Place of Business *(Street & No., City, State, Zip Code)*

3. Type of carrier [A] Private, Employer ID No. (IRS) _____ [B] ICC authorized, MC _____ [C] Other *(Specify)* _____ Employer ID No. (IRS) _____

4. Type of trip [A] Over-the-road [B] Local pick-up and delivery operation

5. Place accident occurred *(Nearest Town or City, State)*

5A. Type of district [A] Residential [B] Rural [C] Primarily business

6. Street or highway *(Route or Name)*

6A. Location if off highway

7. Day of week [A] M [B] T [C] W [D] TH [E] F [F] S [G] S

8. Date accident occurred ...../...../.....

9. Time accident occurred *(Military time to nearest hour)*

10. ACCIDENT TYPE *(Primary Event)*

10A. Collision *(Check appropriate box)*
[A] Not applicable [B] Collision with moving object [C] Collision with fixed or parked object

10B. Collision *(Check other object involved)*
[A] Not applicable [E] Pedestrian [I] Animal
[B] Commercial truck [F] Bus [J] Motorcycle
[C] Fixed object [G] Train [K] Other *(Specify)* _____
[D] Automobile [H] Bicyclist

10C. Collision with another vehicle—Accident Classification *(Check appropriate box)* zzz [ ] not applicable

VEHICLES (Your's is #1)				ACTION	VEHICLES				ACTION
	1	2	3			1	2	3	
A				Slowing—Stopping	L				Intersection
B				Stopped	M				Passing
C				Parked	N				Changing Lanes
D				Rear-ended Other Vehicle	O				Sideswipe—Opposite Direction
E				Backing	P				Head-On—Crossed Into Opposing Lane
F				Making Right Turn	Q				Skidding
G				Making Left Turn	R				Vehicle Out-Of-Control
H				Making U-Turn	S				Unattended Vehicle Rolled Away
I				Proceeding Straight	T				Controlled Railroad Crossing
J				Merging	U				Uncontrolled Railroad Crossing
K				Entering Traffic From Shoulder, Median, Parking Strip or Private Drive	V				Other *(Specify)* _____

10D. Non-collision *(Check primary event)*
[A] Not applicable [C] Jackknife [E] Fire [I] Other *(Specify)*
[B] Ran off road [D] Overturn [G] Loss or spillage of cargo _____
[F] Separation of units [H] Cargo shift

10E. If not primary event, did accident result in
[A] Not applicable [B] Spillage of hazardous cargo [C] Fire [D] Spillage of non-hazardous cargo [E] Explosion

11. DRIVER INFORMATION

11A. Name of your driver

11B. Age

11C. Carrier USDOT Number

11D. How long employed as your driver *(To nearest year)*

11E. Hours actually driving since last period of 8 consecutive hours off duty
[A] 1 hr. [C] 3 hrs. [E] 5 hrs. [G] 7 hrs. [I] 9 hrs. [K] 11-12 hrs.
[B] 2 hrs. [D] 4 hrs. [F] 6 hrs. [H] 8 hrs. [J] 10 hrs. [L] Not applicable

11F. Anticipated driving time between periods of 8 consecutive hours off duty if accident had not occurred
[A] 1 hr. [C] 3 hrs. [E] 5 hrs. [G] 7 hrs. [I] 9 hrs. [K] 11-12 hrs.
[B] 2 hrs. [D] 4 hrs. [F] 6 hrs. [H] 8 hrs. [J] 10 hrs. [L] Not applicable

11G. Condition of driver
[A] Apparently normal [C] Had been drinking [E] Medical waiver
[B] Sick [D] Dozed at wheel [F] Other *(Specify)* _____

11H. Date of last medical certificate ...../...../.....

Form MCS 50-T (Property-Carrying) (Rev. 8-89) Previous editions of this form are obsolete
(over)

12. CARRIER'S VEHICLE(S)

Type		Year	No. of Axles	Make	Model No.	Company No.	TYPE OF BODY: Van	Flat	Tank	Auto Carrier	Other (Specify)
A	Truck										
B	Tractor										
C	Semi-trailer										
D	Full trailer										
E	Full trailer (2nd)										
F	Other *(Specify)*_____										

13. Total length of vehicle/comb. ____ Ft.
13A. Total width of vehicle or cargo ____ Ft.
13B. Weight (cargo) ____ Lbs.
13C. Weight (gross) ____ Lbs.

14. Type of fuel [A] Gasoline [B] Diesel [C] L.P.G. [D] Other *(Specify)*_____

15. Cargo at time of accident *(Your vehicle)*
[A] Hazardous materials in cargo *(Specify classification)*_____ [B] Non-hazardous materials in cargo

16. Check one of the following as principal type of cargo
[A] General freight
[B] Household goods or uncrated furniture/fixtures
[C] Metal: Coils, sheets, rods, plates, etc.
[D] Heavy machinery or other large objects
[E] Motor vehicles
[F] Driveaway-towaway
[G] Gases in bulk
[H] Solids in bulk
[I] Liquids in bulk
[J] Explosives
[K] Logs, poles, lumber
[L] Empty
[M] Refrigerated foods
[N] Mobile home
[O] Farm products
[P] Other *(Specify)*_____

17. Was your driver killed? [A] Yes [B] No
17A. Was driver injured? [A] Yes [B] No
17B. Was your relief driver killed? [A] Yes [B] No [C] N/A
17C. Was relief driver injured? [A] Yes [B] No [C] N/A

18. Number of other authorized persons in your vehicle Killed____ Injured____
18A. Number of unauthorized persons in your vehicle Killed____ Injured____

19. Total number of other persons killed____ injured____
19A. Amount of total property damage in dollars $ ____

20. Were mechanical defects or failures apparent on your vehicle at time of accident? [A] Yes [B] No

21. Check appropriate boxes (Mechanical defects or failures)
[A] Not applicable
[B] Fuel system
[C] Wheels and tires
[D] Steering system
[E] Suspension
[F] Transmission
[G] Driveline
[H] Engine
[I] Brakes
[J] Lights
[K] Coupling
[L] Other *(Specify)*_____

22. Was your vehicle equipped with seat belts? [A] Yes [B] No

23. Were seat belts in use by your driver(s) at time of accident? [A] Yes [B] No

24. OTHER VEHICLES INVOLVED

24A. Company name or operator *(Vehicle #2)*	24B. Address	24C. Type of vehicle
24D. Company name or operator *(Vehicle #3)*	24E. Address	24F. Type of vehicle

25. Weather
[A] Rain [B] Clear [C] Snow [D] Fog/Smog [E] Cloudy/overcast [F] Sleet [G] Other *(Specify)*_____

25A. Light
[A] Day [B] Artificial lights [C] Dawn [D] Other *(Specify)*_____ [E] Dusk [F] Dark

26. Road surface
[A] Dry [B] Wet [C] Snowy [D] Icy [E] Other *(Specify)*_____

26A. Total number of lanes
[A] One lane [B] Two lanes [C] Three lanes [D] Four or more lanes

26B. Type of highway
[A] Divided [B] Undivided

26C. Check appropriate box [A] Entrance ramp (Expressway) [B] Exit ramp (Expressway) [C] Not applicable

27. Account of accident by carrier official *(Please type or print clearly.)*

28. Name and title of person signing report

29. Signature

30. Telephone Number
Area Code

31. Date report submitted
_____/_____/_____

Form MCS 50-T (Rev. 8-89)

*U.S.GPO:1989-261-335/03363

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of Transportation

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